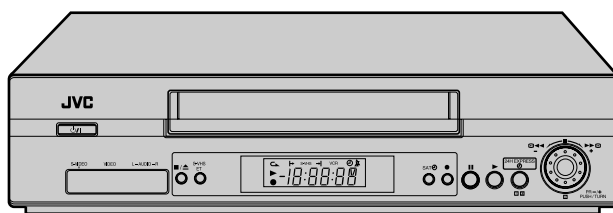


JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S6950EU, HR-S6955MS, HR-S7950EU, HR-S7955EK, HR-S7955MS



SHOWVIEW[®]
DELUXE
Hi-Fi S-VHS
625
Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S7950EU.)*

GENERAL

Power requirement : AC 220 V – 240 V~, 50 Hz/60 Hz

Power consumption

Power on : 18 W

Power off : 3.6 W

Temperature

Operating : 5°C to 40°C

Storage : –20°C to 60°C

Operating position : Horizontal only

Dimensions (WxHxD)

: 400 mm x 94 mm x 270 mm

Weight

: 3.4 kg

Format

: S-VHS/VHS PAL standard

Maximum recording time

(SP) : 240 min. with E-240 video cassette

(LP) : 480 min. with E-240 video cassette

(EP) : 720 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines
50 fields

Recording system : DA4 (Double Azimuth) head helical scan system

Signal-to-noise ratio: 45 dB

Horizontal resolution

(SP/LP) : 250 lines (VHS)

400 lines (S-VHS)

(EP) : 220 lines (VHS)

350 lines (S-VHS)

Frequency range : 70 Hz to 10,000 Hz (Normal audio)
20 Hz to 20,000 Hz (Hi-Fi audio)

Input/Output

: 21-pin SCART connectors:
IN/OUT x 1, IN/DECODER x 1

RCA connectors:

VIDEO IN x 1, AUDIO IN x 1,

AUDIO OUT x 1

S-Video connector:

IN x 1, OUT x 1

TUNER/TIMER

TV channel storage capacity

: 99 positions (+AUX position)

Tuning system : Frequency synthesized tuner

Channel coverage : VHF 47 MHz – 89 MHz/

104 MHz – 300 MHz/

302 MHz – 470 MHz

UHF 470 MHz – 862 MHz

Aerial output : UHF channels 22 – 69 (Adjustable)

Memory backup time

: Approx. 10 min.

ACCESSORIES

Provided accessories

: RF cable,

Infrared remote control unit,

“R6” battery x 2

Specifications shown are for SP mode unless otherwise specified.

E. & O.E. Design and specifications subject to change without notice.

V15S1/S2/S15

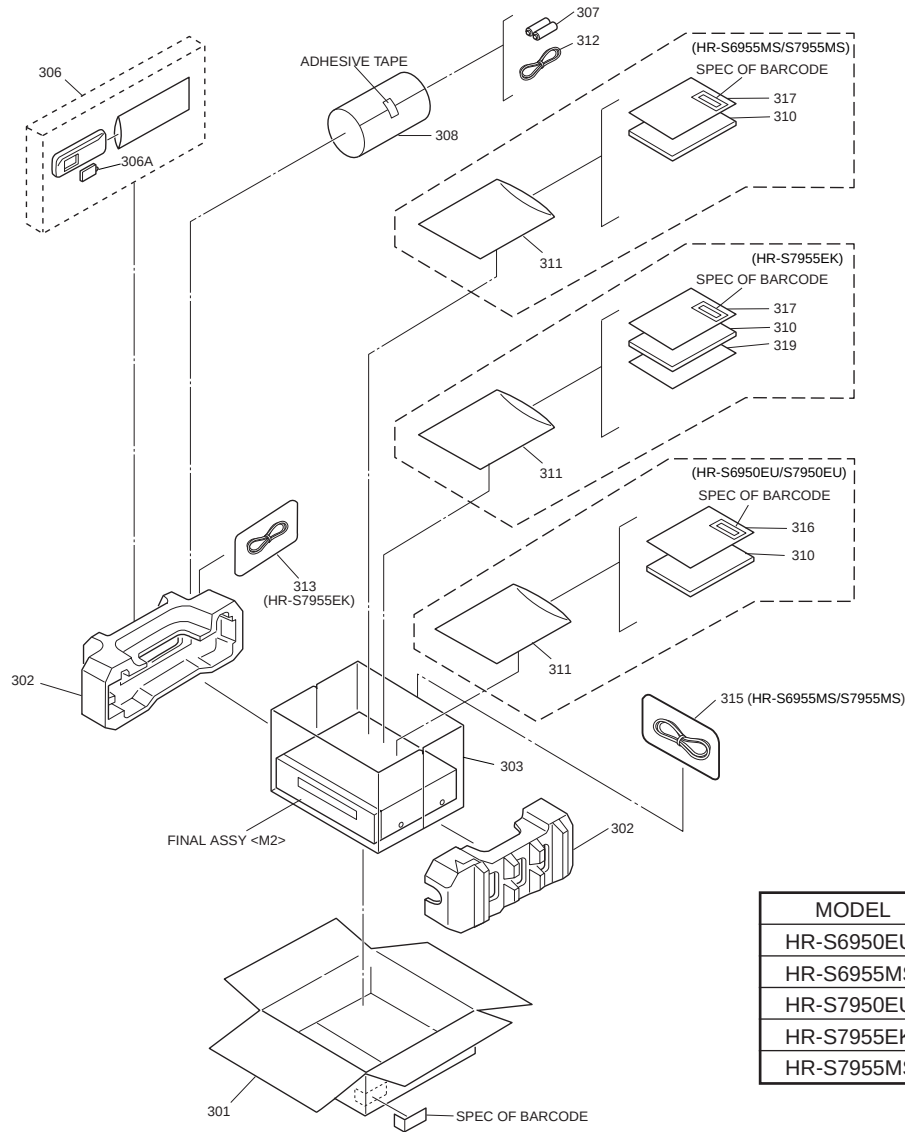
SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



MODEL	MARK
HR-S6950EU	A
HR-S6955MS	B
HR-S7950EU	C
HR-S7955EK	D
HR-S7955MS	E

⚠ REF No. PART No. PART NAME, DESCRIPTION

PACKING AND ACCESSORY ASSEMBLY <M1>

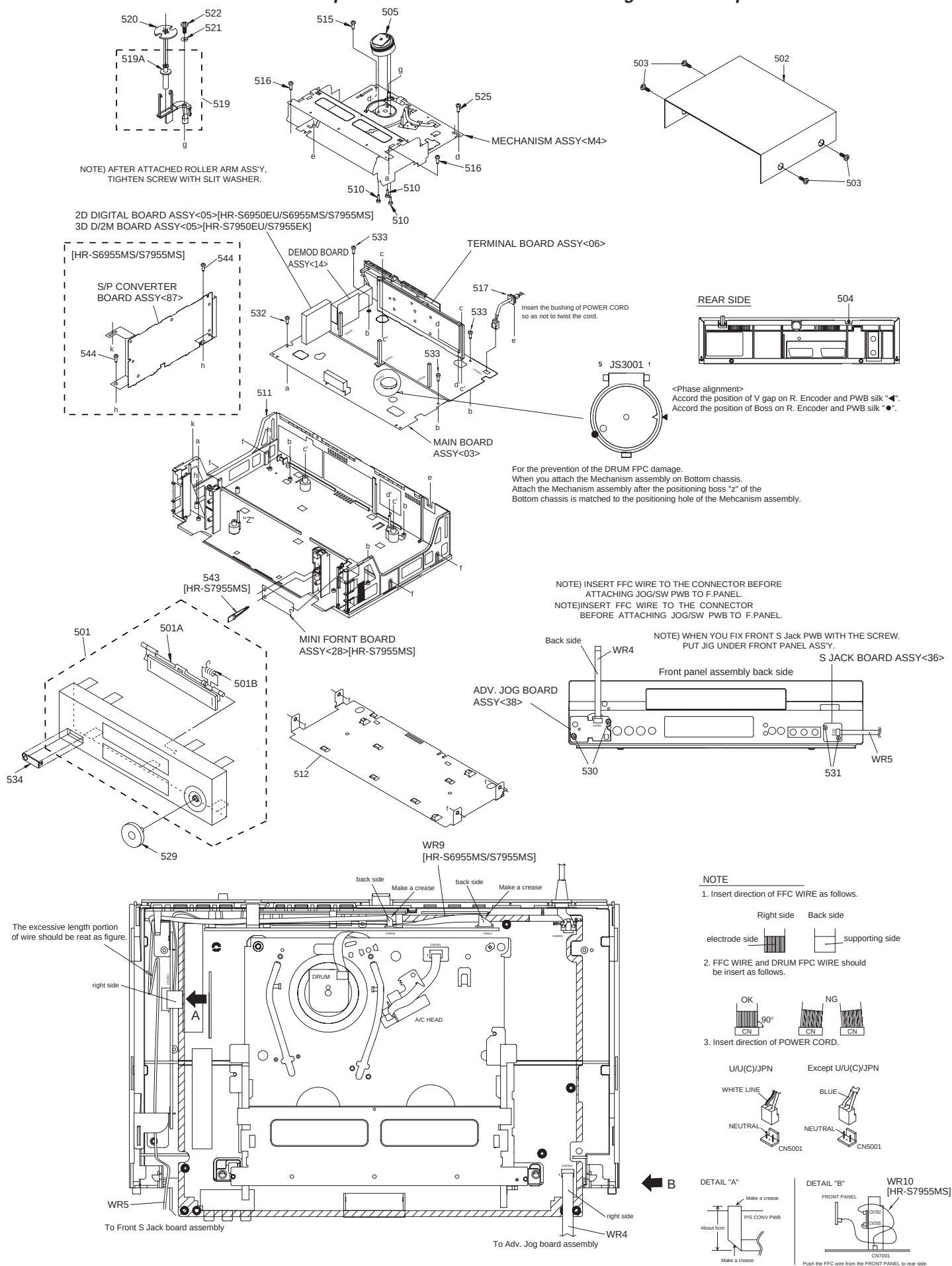
301	LP30855-004A	PACKING CASE
302	LP30909-001C	CUSHION ASSY
303	PQM30021-93	POLY BAG
306	LP20878-016A	REMOTE CONTROLLER
306A	LP40610-003A	COVER(BATTERY)
307	-	BATTERY,X2("R6"TYPE)
308	QPC02202230P	POLY BAG
⚠ 310	LPT0650-001B	INST.BOOK(EN),A
⚠	LPT0650-002B	INST.BOOK(GE),A
⚠	LPT0650-003A	INST.BOOK(FR),A
⚠	LPT0650-004A	INST.BOOK(DU),A
⚠	LPT0650-005A	INST.BOOK(SP),A
⚠	LPT0650-006A	INST.BOOK(IT),A
⚠	LPT0650-007A	INST.BOOK(DA),A
⚠	LPT0650-008A	INST.BOOK(FI),A
⚠	LPT0650-009A	INST.BOOK(SW),A
⚠	LPT0650-010A	INST.BOOK(NO),A
⚠	LPT0650-011A	INST.BOOK(PT),A
⚠	LPT0650-012A	INST.BOOK(GR),A
⚠	LPT0650-013A	INST.BOOK(CZ),A
⚠	LPT0650-014A	INST.BOOK(PO),A

⚠ REF No. PART No. PART NAME, DESCRIPTION

⚠	LPT0650-015A	INST.BOOK(HU),A
⚠	LPT0650-016A	INST.BOOK(RU),A
⚠	LPT0651-001A	INST.BOOK(EN),C
⚠	LPT0651-002A	INST.BOOK(GE),C
⚠	LPT0651-003A	INST.BOOK(FR),C
⚠	LPT0651-004A	INST.BOOK(DU),C
⚠	LPT0651-005A	INST.BOOK(SP),C
⚠	LPT0651-006A	INST.BOOK(IT),C
⚠	LPT0651-007A	INST.BOOK(DA),C
⚠	LPT0651-008A	INST.BOOK(FI),C
⚠	LPT0651-009A	INST.BOOK(SW),C
⚠	LPT0651-010A	INST.BOOK(NO),C
⚠	LPT0651-011A	INST.BOOK(PT),C
⚠	LPT0651-012A	INST.BOOK(GR),C
⚠	LPT0651-013A	INST.BOOK(CZ),C
⚠	LPT0651-014A	INST.BOOK(PO),C
⚠	LPT0651-015A	INST.BOOK(HU),C
⚠	LPT0655-001A	INST.BOOK(EN),D
⚠	LPT0658-001A	INST.BOOK(FR),B
⚠	LPT0659-001B	INST.BOOK(FR),E
311	QPC02503530P	POLY BAG
312	PEAC0300-02	RF CABLE
313	QAL0095-005	LED CABLE ASSY,D
315	QAM0238-003	PERI CABLE,B,E
316	BT-54013-2	WARRANTY CARD,A,C
317	BT-54008-2	GUARANTY CARD,B,D,E
319	LYT0194-001B	Q.CARD(JUK),D

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



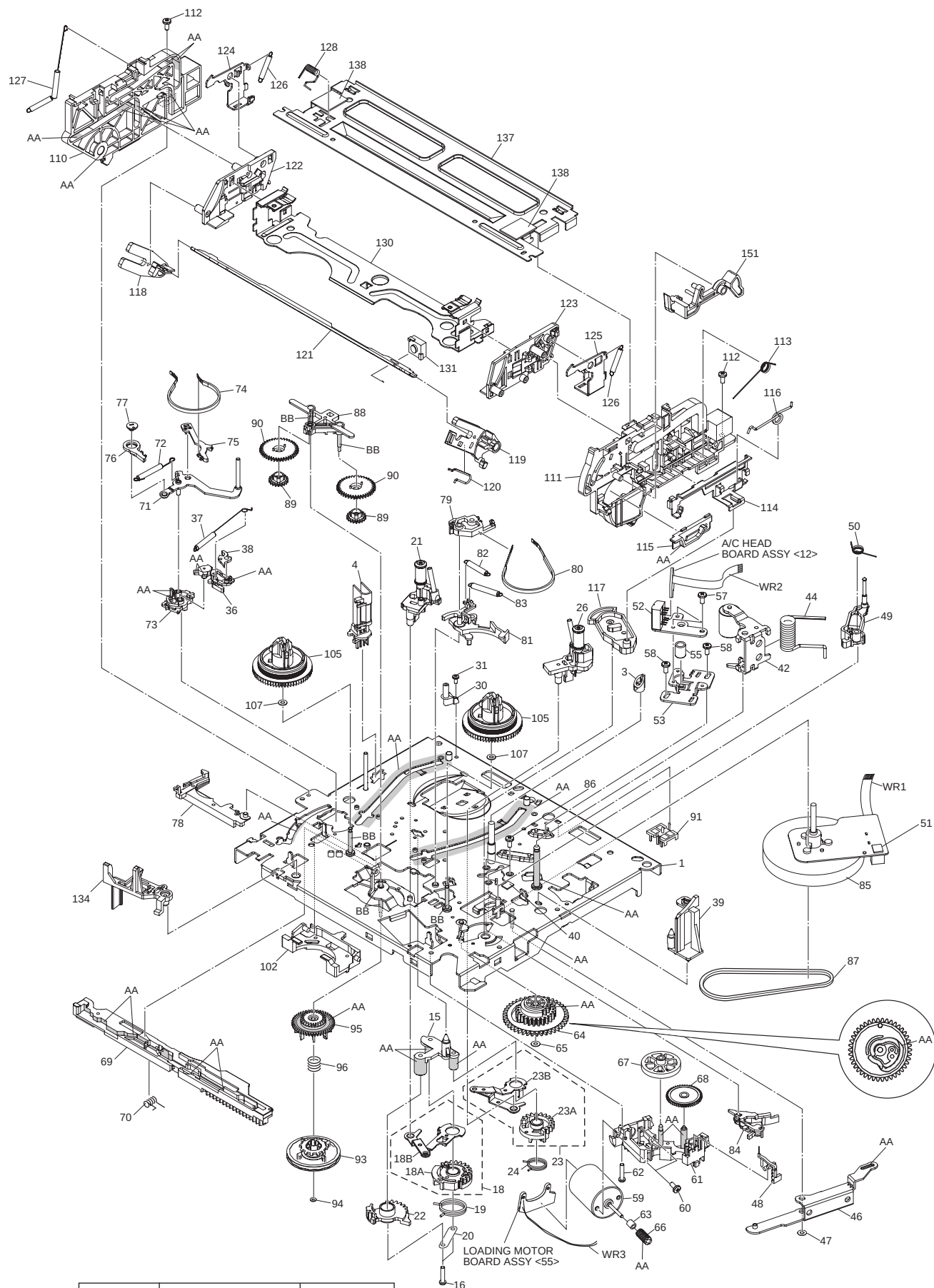
▲ REF No. PART No. PART NAME, DESCRIPTION

FINAL ASSEMBLY <M2>

▲	501	LP10427-014F	FRONT PANEL ASSY,A
▲		LP10427-016F	FRONT PANEL ASSY,B
▲		LP10427-017F	FRONT PANEL ASSY,C
▲		LP10427-018F	FRONT PANEL ASSY,D
▲		LP10427-019F	FRONT PANEL ASSY,E
	501A	LP20961-007C	CASSETTE DOOR,A,B,E
		LP20961-010C	CASSETTE DOOR,C,D
	501B	PQ46448	TORSION SPRING
▲	502	LP10013-051B	TOP COVER
	503	QYTDSF3010R	SCREW,X4,TOP COVER(SIDE)
	504	QYTDSF3010M	SCREW,TOP COVER(REAR)
	505	PDV2544A	DRUM ASSY,A,B,C,D
		PDV2547A	DRUM ASSY,E
	510	QYSPSPD3008Z	SCREW,X3,DRUM
▲	511	LP10108-016E	BOTTOM CHASSIS
▲	512	LP10014-002C	BOTTOM COVER
	515	QYTDSF4012Z	SCREW,MECHA
	516	QYSPSFG3010Z	SCREW,X2,MECHA
▲	517	QMP4A10-170	POWER CORD,A,B,C,E
▲		QMP51K0-170-K	POWER CORD,D
	519	LP40370-001F	ROLLER ARM ASSY
	519A	PDM4311A-1	ROLLER ASSY
	520	PQ45160	INERTIA PLATE
	521	PQM30017-51	SLIT WASHER
	522	QYSLSF2060D	SCREW
	525	LP40700-001A	SPECIAL SCREW,MECHA
	529	LP31019-005C	KNOB ASSY,B,C,D,E
		LP31019-005D	KNOB ASSY,A
	530	QYTPSFG2608Z	SCREW,X2,ADJ.JOG
	531	QYTDSF2608Z	SCREW,X2,S JACK
	532	QYTDSF3010Z	SCREW,MAIN
	533	DPSF3010Z	SCREW,X3,MAIN
	534	LP30871-003B	CAP(JACK)
	543	LP40628-001B	PC SUPPORT,E
	544	QYTDSF3008Z	SCREW,X2,S/P CONV.,B,E
	WR4	QUQ212-0414CG	FFC WIRE,ADV.JOG CN7003
	WR5	QUQ212-0456CG	FFC WIRE,S JACK CN7103
	WR9	QUQ112-1140CG	FFC WIRE,S/P CONV. CN1601,B,E
	WR10	QUQ112-0614CG	FFC WIRE,MINI FRONT CN7002,E

▲ REF No. PART No. PART NAME, DESCRIPTION

5.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION

MECHANISM ASSEMBLY <M4>									
1			LP21039-001R	MAIN DECK ASSY	80			LP40824-001A	BAND BRAKE ASSY
3			LP40097-002D	GUIDE POLE CAP	81			LP30969-002A	BRAKE LEVER
4			QAH0082-001	FULL ERASE HEAD	82			LP30003-033B	TENSION SPRING
15			LP30958-001B	LOAD.GEAR BASE	83			LP30003-035B	TENSION SPRING
16			QYTPST2620Z	SCREW,X2	84			LP40825-001B	CAPSTAN BRAKE ASSY
18			LP40798-001A	LOAD.GEAR(SUPPLY)ASSY	△ 85			QAR0204-002	CAPSTAN MOTOR
18A			LP21040-001A	LOAD.GEAR(SUPPLY)	86			QYTDSF2606M	SCREW,X3
18B			LP40799-001A	LOAD.ARM(SUPPLY)ASSY	87			LP30005-010A	BELT,CAPSTAN MOTOR
19			LP40837-001A	TORSION SPRING(SUPPLY)	88			LP30970-001A	IDLER ARM
20			LP40903-001A	FIXING PLATE	89			LP40828-004A	IDLER GEAR 1,X2
21			LP40806-001D	POLE BASE ASSY(SUPPLY)	90			LP40829-001B	IDLER GEAR 2,X2
22			LP30959-002A	LOAD GEAR	91			LP31014-001A	WIRE HOLDER
23			LP40802-001B	LOAD.GEAR(TAKE UP)ASSY	93			LP40934-001B	CLUTCH UNIT
23A			LP21041-001B	LOAD.GEAR(TAKE UP)	94			PQM30017-47	SLIT WASHER
23B			LP40803-001A	LOAD.ARM(TAKE UP)ASSY	95			LP30973-001A	DIRECT GEAR
24			LP40838-001A	TORSION SPRING(TAKE UP)	96			LP40939-001A	COMP. SPRING
26			LP40808-001E	POLE BASE ASSY(TAKE UP)	102			LP30974-001B	CHANGE LEVER
30			LP31020-004A	ARM BASE	105			LP21049-001A	REEL DISK,X2
31			QYTDST2606Z	SCREW	107			LP30017-004A	SPACER,X2
36			LP21055-001E	TU LEVER	110			LP10401-001F	SIDE FRAME(L)
37			LP40943-001A	TENSION SPRING	111			LP10402-001G	SIDE FRAME(R)
38			LP40859-001D	T-UP HEAD	112			QYTDST2606Z	SCREW,X2
39			LP30961-001C	LID GUIDE	113			LP40917-001D	TORSION SPRING
40			LP30002-0B7A	SPACER	114			LP30976-001E	SIDE PLATE
42			LP40810-001A	PINCH ROLLER ARM ASSY	115			LP30977-002D	LIMIT PLATE
44			LP40840-001D	TORSION SPRING	116			LP40846-001C	LIMIT SPRING
46			LP30963-001B	PRESS LEVER	117			LP31100-001B	DRIVE LEVER
47			PQM30017-24	SLIT WASHER	118			LP30978-001B	DRIVE ARM(L)
48			LP40930-002E	S-SWITCH	119			LP30979-001H	DRIVE ARM(R)
49			LP40813-001D	GUIDE ARM ASSY	120			LP40847-001B	TORSION SPRING
50			LP40841-001A	TORSION SPRING	121			LP30980-001B	CONNECT PLATE
51			LP30002-090A	SPACER	122			LP10403-001C	SIDE HOLDER(L)
52			QAH0081-001	AC HEAD	123			LP10404-001E	SIDE HOLDER(R)
53			LP30965-001A	HEAD BASE	124			LP30983-001A	LOCK LEVER(L)
55			LP40842-001A	COMPRESSION SPRING	125			LP30984-001A	LOCK LEVER(R)
57			QYTSST2010Z	SCREW,X3	126			LP40924-001D	TENSION SPRING,X2
58			QYTDST2606Z	SCREW,X2	127			LP40856-001B	EARTH SPRING(1)
59			QAR0023-001	LOADING MOTOR	128			LP40857-001B	EARTH SPRING(2)
60			QYTPSP3003Z	SCREW,X2	130			LP30981-001F	CASSETTE HOLDER ASSY
61			LP21056-002G	MOTOR BRACKET	131			LP31135-001A	C.H STOPPER
62			QYTPST2620Z	SCREW	134			LP21051-002C	REC.SAFETY LEVER
63			LP40814-001B	WORM BEARING	137			LP21052-001H	TOP FRAME
64			LP21044-001D	CONTROL CAM	138			LP30002-0A7A	SPACER,X2
65			PQM30017-24	SLIT WASHER	151			LP30985-001G	DOOR OPENER
66			LP40815-001A	WORM GEAR	WR1			WJT0059-001D	E-CARD WIRE,DRUM
67			LP40816-001B	HELICAL GEAR	WR2			WJT0067-001B	E-CARD WIRE,A/C HEAD CN2001
68			LP40817-001A	CONNECT GEAR	WR3			WJS0022-001A	E-FL/RB WIRE,LOADING MOTOR
69			LP10400-001H	CONTROL PLATE					
70			LP40843-001A	TORSION SPRING					
71			LP40818-001B	TENSION ARM ASSY					
72			LP40844-001D	TENSION SPRING					
73			LP21045-001D	TENSION ARM BASE					
74			LP40821-001A	TENSION BAND ASSY					
75			LP30967-001B	BAND HOLDER-1					
76			LP30968-001C	BAND HOLDER-2					
77			LP40822-002B	ADJUST PIN					
78			LP31000-005E	TENSION ARM LEVER					
79			LP21046-001C	MAIN BRAKE(TAKE UP)					

5.4 ELECTRICAL PARTS LIST

MODEL	MARK	MODEL	MARK
HR-S6950EU	A	HR-S7955EK	D
HR-S6955MS	B	HR-S7955MS	E
HR-S7950EU	C		

△ REF No. PART No. PART NAME, DESCRIPTION

MAIN BOARD ASSEMBLY <03>

PW1 MAIN BOARD ASS'Y<03> includes the parts shown in the following.

PW1 2D DIGITAL BOARD ASS'Y<05>

PW1 3D D/2M BOARD ASS'Y<05>

PW1 TERMINAL BOARD ASS'Y<06>

PW1 DEMOD BOARD ASS'Y<14>

PW1	LPA10170-02C	MAIN BOARD ASSY,C,D
	LPA10170-03D	MAIN BOARD ASSY,E
	LPA10170-04D	MAIN BOARD ASSY,B
	LPA10170-01D	MAIN BOARD ASSY,A
IC1	JCP8051-MSA	IC
IC201	LC74775-9750	IC
IC301	LA7358	IC,B,E
IC2201	AN3651FBP	IC
IC3001	HD6432194SBD30F	IC,A,C,D
	HD6432194SAD32F	IC,B,E
	or HD64F2194CFD30	IC,A,C,D
	or HD64F2194CFD32	IC,B,E
IC3002	IC-PST3427U-X	IC
IC3003	LPN0741-005A-01	IC(EEPROM),A
	LPN0763-003A-81	IC(EEPROM),B
	LPN0758-002A-03	IC(EEPROM),C
	LPN0760-002A-02	IC(EEPROM),D
	LPN0761-003A-82	IC(EEPROM),E
IC7002	GP1U291Q	IR DETECT UNIT
	or PNA4652M00YC	IR DETECT UNIT
Q1	2SC4081/QRS/-X	TRANSISTOR,A,B,C,D
	or 2PC4081/R/-X	TRANSISTOR,A,B,C,D
Q2	2SC4081/QRS/-X	TRANSISTOR,A,B,C,D
	or 2PC4081/R/-X	TRANSISTOR,A,B,C,D
Q3	2SC4081/QRS/-X	TRANSISTOR,A,B,C,D
	or 2PC4081/R/-X	TRANSISTOR,A,B,C,D
Q4	2SC4081/QRS/-X	TRANSISTOR,A,B,C,D
	or 2PC4081/R/-X	TRANSISTOR,A,B,C,D
Q7	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q8	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q9	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q10	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q11	DTC144WU	DIGI TRANSISTOR,A,B,E
	or PDC144WU	DIGI TRANSISTOR,A,B,E
	or RN1309	DIGI TRANSISTOR,A,B,E
	or UN521E	DIGI TRANSISTOR,A,B,E
Q14	2SA1576A/QR/-X	TRANSISTOR,B,E
	or 2PA1576/R/-X	TRANSISTOR,B,E
Q16	DTC144WU	DIGI TRANSISTOR
	or PDC144WU	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
	or UN521E	DIGI TRANSISTOR
Q18	DTC144WU	DIGI TRANSISTOR,B,E
	or PDC144WU	DIGI TRANSISTOR,B,E
	or RN1309	DIGI TRANSISTOR,B,E
	or UN521E	DIGI TRANSISTOR,B,E
Q19	DTC144WU	DIGI TRANSISTOR,B,E
	or PDC144WU	DIGI TRANSISTOR,B,E
	or RN1309	DIGI TRANSISTOR,B,E

△ REF No. PART No. PART NAME, DESCRIPTION

	or UN521E	DIGI TRANSISTOR,B,E
Q21	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q24	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q25	DTC144WU	DIGI TRANSISTOR,C,D
	or PDC144WU	DIGI TRANSISTOR,C,D
	or RN1309	DIGI TRANSISTOR,C,D
	or UN521E	DIGI TRANSISTOR,C,D
Q38	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q40	DTC144WU	DIGI TRANSISTOR,A,B,E
	or PDC144WU	DIGI TRANSISTOR,A,B,E
	or RN1309	DIGI TRANSISTOR,A,B,E
	or UN521E	DIGI TRANSISTOR,A,B,E
Q41	DTC144WU	DIGI TRANSISTOR
	or PDC144WU	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
	or UN521E	DIGI TRANSISTOR
Q50	DTC144WU	DIGI TRANSISTOR
	or PDC144WU	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
	or UN521E	DIGI TRANSISTOR
Q207	2SA1576A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
Q208	2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q301	2SB1218A/QR/-X	TRANSISTOR,B,E
	or 2PA1576/R/-X	TRANSISTOR,B,E
	or 2SA1576A/QR/-X	TRANSISTOR,B,E
Q302	UN511E	DIGI TRANSISTOR,B,E
	or DTA144WU	DIGI TRANSISTOR,B,E
	or PDA144WU	DIGI TRANSISTOR,B,E
	or RN2309	TRANSISTOR,B,E
Q401	2SA1576A/QR/-X	TRANSISTOR,E
Q402	2SA1576A/QR/-X	TRANSISTOR,E
Q403	DTC144WU	DIGI TRANSISTOR,E
	or PDC144WU	DIGI TRANSISTOR,E
	or RN1309	DIGI TRANSISTOR,E
	or UN521E	DIGI TRANSISTOR,E
Q404	DTC144WU	DIGI TRANSISTOR,E
	or PDC144WU	DIGI TRANSISTOR,E
	or RN1309	DIGI TRANSISTOR,E
	or UN521E	DIGI TRANSISTOR,E
Q405	2SA1576A/QR/-X	TRANSISTOR,E
Q2001	2SC4081/QRS/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q2002	2SC4081/QRS/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q2003	DTA144WU	DIGI TRANSISTOR
	or PDA144WU	DIGI TRANSISTOR
	or RN2309	TRANSISTOR
	or UN511E	DIGI TRANSISTOR
Q2004	DTC144WU	DIGI TRANSISTOR
	or PDC144WU	DIGI TRANSISTOR
	or UN521E	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
Q2051	2SC4081/QRS/-X	TRANSISTOR
	or 2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
			Q2052	2SA1576A/QR/-X				or 2PC4081/R/-X	TRANSISTOR
				or 2SB1218A/QR/-X				or 2SC4081/QRS/-X	TRANSISTOR
				or 2PA1576/R/-X			Q3005	2SD1819A/QRS/-X	TRANSISTOR
		Q2053	DTC144WU	DIGI TRANSISTOR				or 2PC4081/R/-X	TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or 2SC4081/QRS/-X	TRANSISTOR
			or RN1309	DIGI TRANSISTOR			Q3007	UN521E	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR				or DTC144WU	DIGI TRANSISTOR
		Q2054	2SA1576A/QR/-X	TRANSISTOR				or PDTC144WU	DIGI TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR				or RN1309	DIGI TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR			Q4001	UN5211	DIGI TRANSISTOR
		Q2055	DTC144WU	DIGI TRANSISTOR				or DTC114EU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or PDTC114EU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR				or RN1302	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR			Q5101	2SK2632-CB14	POWER MOS FET
		Q2061	2SC4081/QRS/-X	TRANSISTOR,E				or 2SK2129	POWER MOS FET
			or 2SD1819A/QRS/-X	TRANSISTOR,E				or 2SK2129-LT	POWER MOS FET
			or 2PC4081/R/-X	TRANSISTOR,E				or 2SK2632	POWER MOS FET
		Q2062	2SA1576A/QR/-X	TRANSISTOR,E			Q5102	2SD2144S/UV/-T	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR,E			Q5301	2SC1740S/RS/-T	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR,E				or 2SC3199/YG/-T	TRANSISTOR
		Q2063	DTC144WU	DIGI TRANSISTOR,E			Q5303	2SC5739/QP/-	TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR,E			Q5304	2SD2144S/UV/-T	TRANSISTOR
			or RN1309	DIGI TRANSISTOR,E			Q5305	DTA114EU	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR,E				or PDTA114EU	DIGI TRANSISTOR
		Q2201	DTA144WU	DIGI TRANSISTOR				or RN2302	TRANSISTOR
			or PDTA144WU	DIGI TRANSISTOR				or UN5111	DIGI TRANSISTOR
			or RN2309	TRANSISTOR			Q5306	DTC114EU	DIGI TRANSISTOR
			or UN511E	DIGI TRANSISTOR				or PDTC114EU	DIGI TRANSISTOR
		Q2202	DTC144WU	DIGI TRANSISTOR				or RN1302	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or UN5211	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR			Q5307	2SD2144S/UV/-T	TRANSISTOR
			or UN521E	DIGI TRANSISTOR			Q6030	2SB1218A/QR/-X	TRANSISTOR
		Q2203	2SC4081/QRS/-X	TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR			Q6031	DTC114EU	DIGI TRANSISTOR
		Q2204	2SC4081/QRS/-X	TRANSISTOR				or PDTC114EU	DIGI TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR				or RN1302	DIGI TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR				or UN5211	DIGI TRANSISTOR
		Q2251	DTC144WU	DIGI TRANSISTOR			Q6032	DTC114EU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or PDTC114EU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR				or RN1302	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR				or UN5211	DIGI TRANSISTOR
		Q2252	DTC144WU	DIGI TRANSISTOR			Q7001	2SB1218A/QR/-X	TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
			or RN1309	DIGI TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or UN521E	DIGI TRANSISTOR			Q7002	2SB1218A/QR/-X	TRANSISTOR
		Q2253	DTC144WU	DIGI TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or RN1309	DIGI TRANSISTOR			Q7003	2SB1218A/QR/-X	TRANSISTOR
			or UN521E	DIGI TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
		Q2254	DTC114EU	DIGI TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR			Q7004	2SB1218A/QR/-X	TRANSISTOR
			or RN1302	DIGI TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
			or UN5211	DIGI TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
		Q2255	DTC114EU	DIGI TRANSISTOR			Q7005	2SB1218A/QR/-X	TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
			or RN1302	DIGI TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or UN5211	DIGI TRANSISTOR			Q7006	2SB1218A/QR/-X	TRANSISTOR
		Q3002	PTZ-NV16A	PHOTO TRANSISTO				or 2PA1576/R/-X	TRANSISTOR
		Q3003	PTZ-NV16A	PHOTO TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
		Q3004	2SD1819A/QRS/-X	TRANSISTOR			Q7007	2SB1218A/QR/-X	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION		#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
		or 2PA1576/R/-X	TRANSISTOR		D5210		AU01Z	FR DIODE	
		or 2SA1576A/QR/-X	TRANSISTOR				or ERA18-02-T2	FR DIODE	
Q7008		DTC143TU	DIGI TRANSISTOR				or PG104RS	FR DIODE	
		or UN5216	TRANSISTOR				or 1SR153-400-T2	FR DIODE	
Q7009		DTC143TU	DIGI TRANSISTOR				or 10ELS2	FR DIODE	
		or UN5216	TRANSISTOR		D5301		MTZJ15C	ZENER DIODE	
Q7010		DTC143TU	DIGI TRANSISTOR				or RD15ES/B3/-T2	ZENER DIODE	
		or UN5216	TRANSISTOR		D5302		MTZJ11C	ZENER DIODE	
Q7011		DTC143TU	DIGI TRANSISTOR				or RD11ES/B3/-T2	ZENER DIODE	
		or UN5216	TRANSISTOR		D5303		MTZJ5.6A	ZENER DIODE	
Q7012		DTC143TU	DIGI TRANSISTOR				or RD5.6ES/B1/-T2	ZENER DIODE	
		or UN5216	TRANSISTOR		D5305		MTZJ5.6C	ZENER DIODE	
Q7013		DTC143TU	DIGI TRANSISTOR				or RD5.6ES/B3/-T2	ZENER DIODE	
		or UN5216	TRANSISTOR		D6002		HZ30-2L-T2	ZENER DIODE	
Q7014		DTC143TU	DIGI TRANSISTOR				or HZ30-2LTD	Z DIODE (M)	
		or UN5216	TRANSISTOR		D7051		1SS133	DIODE	
Q7201		2SC1317/RS/-T	TRANSISTOR				or 1SS270A	DIODE	
D1		QUY153-050Y	IM BUS WIRE		R1		NRSA02J-622X	MG RESISTOR	6.2kΩ,1/10W
D201		QRE141J-152Y	RESISTOR	1.5kΩ,1/4W	R2		NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
D202		QRE141J-101Y	RESISTOR	100Ω,1/4W	R3		NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
D203		QRE141J-101Y	RESISTOR	100Ω,1/4W	R5		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
D2251		1SS133	DIODE		R6		NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
D3001		LNB2301L01VI	LE DIODE		R7		NRSA02J-681X	MG RESISTOR	680Ω,1/10W
D3002		1SS133	DIODE		R10		QRE141J-103Y	RESISTOR	10kΩ,1/4W
		or 1SS270A	DIODE		R21		NRSA02J-102X	MG RESISTOR,A,B,C,D	1kΩ,1/10W
D3003		RD39ES/B3/-T2	ZENER DIODE		R22		NRSA02J-102X	MG RESISTOR,A,B,C,D	1kΩ,1/10W
		or MTZJ39C	ZENER DIODE		R23		NRSA02J-182X	MG RESISTOR,B,E	1.8kΩ,1/10W
D3004		11ES2	DIODE		R25		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		or 1A3G	DIODE		R26		NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
D3005		11ES2	DIODE		R27		NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		or 1A3G	DIODE		R28		NRSA02J-221X	MG RESISTOR	220Ω,1/10W
D3008		1SS355	DIODE		R29		NRSA02J-561X	MG RESISTOR	560Ω,1/10W
D4001		QUY153-050Y	IM BUS WIRE		R30		NRSA02J-103X	MG RESISTOR,B,E	10kΩ,1/10W
D4002		QUY153-050Y	IM BUS WIRE		R31		NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
D5001		S1WB/A/60-4102	BRIDGE DIODE		R32		NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		or S1WB(A)60F4072X	BRIDGE DIODE		R35		NDC21HJ-470X	CAPACITOR	47pF,50V
		or S1WB/A/60-X	BRIDGE DIODE		R36		NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
D5101		AU01	DIODE		R38		NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		or ERA18-04-T2	FR DIODE		R40		NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		or 1SR153-400-T2	FR DIODE		R41		NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		or 10ELS4	FR DIODE		R42		NRSA02J-681X	MG RESISTOR	680Ω,1/10W
D5102		AU01	DIODE		R43		NRSA02J-102X	MG RESISTOR,A,B,E	1kΩ,1/10W
		or ERA18-04-T2	FR DIODE		R46		NRSA02J-221X	MG RESISTOR,A,B,E	220Ω,1/10W
		or 1SR153-400-T2	FR DIODE				NRSA02J-471X	MG RESISTOR,C,D	470Ω,1/10W
		or 10ELS4	FR DIODE		R48		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
D5103		1SS133	DIODE		R51		NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		or 1SS270A	DIODE		R52		NQR0360-003X	FERRITE BEADS,A,B,E	
D5105		1SS133	DIODE				NRSA02J-101X	MG RESISTOR,C,D	100Ω,1/10W
		or 1SS270A	DIODE		R65		NRSA02J-102X	MG RESISTOR,B,E	1kΩ,1/10W
D5203		AU01Z	FR DIODE		R68		NRSA02J-472X	MG RESISTOR,B,E	4.7kΩ,1/10W
		or 10ELS2	FR DIODE		R76		NRSA02J-103X	MG RESISTOR,B,E	10kΩ,1/10W
D5204		AU01Z	FR DIODE		R77		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		or 10ELS2	FR DIODE		R84		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
D5207		AK04	SB DIODE		R88		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		or SBO40	SB DIODE		R90		NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		or 1S4	SB DIODE		R93		NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		or 11EQS04	SB DIODE		R104		NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
D5209		AK04	SB DIODE		R117		NRSA02J-104X	MG RESISTOR,C,D	100kΩ,1/10W
		or SBO40	SB DIODE		R118		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		or 1S4	SB DIODE		R201		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		or 11EQS04	SB DIODE		R202		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R208			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	R2062			NRSA02J-3R3X	MG RESISTOR,E 3.3Ω,1/10W
R209			NRSA02J-512X	MG RESISTOR 5.1kΩ,1/10W	R2063			QRE141J-151Y	RESISTOR,E 150Ω,1/4W
R210			NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W	R2064			NRSA02J-473X	MG RESISTOR,E 47kΩ,1/10W
R211			NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W	R2065			NRSA02J-183X	MG RESISTOR,E 18kΩ,1/10W
R212			NRSA02J-101X	MG RESISTOR 100Ω,1/10W	R2201			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R213			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R2202			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R216			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R2203			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R224			NRSA02J-101X	MG RESISTOR 100Ω,1/10W	R2204			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R225			NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R2205			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R226			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R2206			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R301			NRSA02J-273X	MG RESISTOR,B,E 27kΩ,1/10W	R2207			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R302			NRSA02J-124X	MG RESISTOR,B,E 120kΩ,1/10W	R2208			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R303			NRSA02J-273X	MG RESISTOR,B,E 27kΩ,1/10W	R2209			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R304			NRSA02J-682X	MG RESISTOR,B,E 6.8kΩ,1/10W	R2210			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R305			NRSA02J-473X	MG RESISTOR,B,E 47kΩ,1/10W	R2211			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R306			NRSA02J-273X	MG RESISTOR,B,E 27kΩ,1/10W	R2212			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R307			NRSA02J-222X	MG RESISTOR,B,E 2.2kΩ,1/10W	R2213			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R308			NRSA02J-222X	MG RESISTOR,B,E 2.2kΩ,1/10W	R2214			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R309			NRSA02J-0R0X	MG RESISTOR,B,E 0Ω,1/10W	R2215			NRSA02J-181X	MG RESISTOR 180Ω,1/10W
R310			NRSA02J-223X	MG RESISTOR,B,E 22kΩ,1/10W	R2216			NRSA02J-122X	MG RESISTOR,A,C,D 1.2kΩ,1/10W
R311			NRSA02J-472X	MG RESISTOR,B,E 4.7kΩ,1/10W	R2217			NRSA02J-472X	MG RESISTOR,A,C,D 4.7kΩ,1/10W
R312			NRSA02J-272X	MG RESISTOR,B,E 2.7kΩ,1/10W	R2218			NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R313			NRSA02J-223X	MG RESISTOR,B,E 22kΩ,1/10W	R2219			NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R314			NRVA02D-243X	CMF RESISTOR,B,E 24kΩ,1/10W	R2220			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R315			NRSA02J-564X	MG RESISTOR,B,E 560kΩ,1/10W	R2222			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R316			NRSA02J-124X	MG RESISTOR,B,E 120kΩ,1/10W	R2223			NRSA02J-511X	MG RESISTOR 510Ω,1/10W
R318			NRSA02J-821X	MG RESISTOR,B,E 820Ω,1/10W	R2224			NRSA02J-511X	MG RESISTOR 510Ω,1/10W
R329			NRSA02J-0R0X	MG RESISTOR,B,E 0Ω,1/10W	R2225			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R401			NRSA02J-221X	MG RESISTOR,E 220Ω,1/10W	R2226			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R402			NRSA02J-681X	MG RESISTOR,E 680Ω,1/10W	R2227			NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
R403			NRSA02J-561X	MG RESISTOR,E 560Ω,1/10W	R2228			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R404			NRSA02J-473X	MG RESISTOR,E 47kΩ,1/10W	R2229			NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
R405			NRSA02J-683X	MG RESISTOR,E 68kΩ,1/10W	R2230			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R406			NRSA02J-393X	MG RESISTOR,E 39kΩ,1/10W	R2231			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R407			NRSA02J-472X	MG RESISTOR,E 4.7kΩ,1/10W	R2232			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R408			NRSA02J-473X	MG RESISTOR,E 4.7kΩ,1/10W	R2233			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2003			NRSA02J-101X	MG RESISTOR 100Ω,1/10W	R2234			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2005			NRSA02J-153X	MG RESISTOR 15kΩ,1/10W	R2235			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R2007			NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R2236			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R2008			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R2237			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R2010			NRSA02J-123X	MG RESISTOR 12kΩ,1/10W	R2238			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R2013			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W	R2251			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2014			NRSA02J-224X	MG RESISTOR 220kΩ,1/10W	R2252			NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2015			NRSA02J-181X	MG RESISTOR 180Ω,1/10W	R2253			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2016			NRSA02J-393X	MG RESISTOR 39kΩ,1/10W	R2254			QRE141J-103Y	RESISTOR 10kΩ,1/4W
R2017			NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R2255			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R2018			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R2256			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R2019			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3011			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2020			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3012			NRSA02J-102X	MG RESISTOR,B,E 1kΩ,1/10W
R2041			QRE141J-0R0	RESISTOR 0Ω,1/4W	R3013			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2053			NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W	R3014			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2054			NRSA02J-123X	MG RESISTOR,A,B,C,D 12kΩ,1/10W	R3015			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
			NRSA02J-153X	MG RESISTOR,E 15kΩ,1/10W	R3016			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2055			NRSA02J-3R3X	MG RESISTOR 3.3Ω,1/10W	R3017			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2056			QRE141J-101Y	RESISTOR,E 100Ω,1/4W	R3018			NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
			QRE141J-820Y	RESISTOR,A,B,C,D 82Ω,1/4W	R3019			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2057			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W	R3020			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2058			NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R3021			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2059			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W	R3022			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2060			NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R3025			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2061			NRSA02J-273X	MG RESISTOR,E 27kΩ,1/10W	R3026			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R3027		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3103		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3029		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3104		NRSA02J-0R0X	MG RESISTOR,E 0Ω,1/10W
R3030		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3105		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3031		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3106		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3032		NRSA02J-102X	MG RESISTOR,C,D,E 1kΩ,1/10W	R3205		QRE141J-181Y	RESISTOR 180Ω,1/4W
R3033		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3206		NRSA02J-123X	MG RESISTOR 12kΩ,1/10W
R3034		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3207		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R3035		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3208		NRSA02J-121X	MG RESISTOR 120Ω,1/10W
R3036		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3209		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R3037		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3210		NRSA02J-121X	MG RESISTOR 120Ω,1/10W
R3038		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W	R3211		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R3039		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3212		NRSA02J-474X	MG RESISTOR 470kΩ,1/10W
R3040		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3213		NRSA02J-334X	MG RESISTOR 330kΩ,1/10W
R3041		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3214		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3042		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3215		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3044		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3216		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3046		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3217		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3047		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3218		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3048		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3219		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3049		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3220		NRSA02J-104X	MG RESISTOR 100kΩ,1/10W
R3050		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3222		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3051		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3223		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3052		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3224		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3053		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R3225		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3054		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3229		NRSA02J-105X	MG RESISTOR 1MΩ,1/10W
R3055		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3230		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3056		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3231		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3057		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3233		NRSA02J-103X	MG RESISTOR,C,D,E 10kΩ,1/10W
R3058		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3234		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3059		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3235		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R3060		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3236		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R3061		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R3237		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3062		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R3238		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3063		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R3241		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3066		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R3242		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3069		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	R3252		NRSA02J-153X	MG RESISTOR 15kΩ,1/10W
R3071		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R3253		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3072		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R4003		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R3073		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4004		NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R3074		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4005		NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3075		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R4007		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3076		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	R4008		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3077		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4009		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3078		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4010		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3079		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4011		NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R3080		NRSA02J-101X	MG RESISTOR,C,D 100Ω,1/10W	R4012		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R3081		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4013		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3083		NRSA02J-0R0X	MG RESISTOR,C,D 0Ω,1/10W	R4015		NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3085		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4017		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3086		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5101		QRE141J-224Y	RESISTOR 220kΩ,1/4W
R3087		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5102		QRE141J-224Y	RESISTOR 220kΩ,1/4W
R3088		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5103		QRE141J-683Y	RESISTOR 68kΩ,1/4W
R3089		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5104		QRG02GJ-683	OMF RESISTOR 68kΩ,2W
R3090		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5106		QRT01DJ-R39X	MF RESISTOR 0.39Ω,1W
R3091		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5107		QRE121J-331Y	RESISTOR 330Ω,1/2W
R3092		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5108		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
R3093		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5109		QRE141J-561Y	RESISTOR 560Ω,1/4W
R3094		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5110		NRSA02J-224X	MG RESISTOR 220kΩ,1/10W
R3095		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5111		NRSA02J-391X	MG RESISTOR 390Ω,1/10W
R3096		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5112		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R3097		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R5302		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
R5303			NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W	B5001			QUY160-100Y	IM BUS WIRE	
R5304			NRSA02J-471X	MG RESISTOR	470Ω,1/10W	B5002			QUY160-100Y	IM BUS WIRE	
R5306			NRSA02J-181X	MG RESISTOR	180Ω,1/10W	B7001			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R5310			NRSA02J-103X	MG RESISTOR	10kΩ,1/10W	C1			NCB21EK-104X	CAPACITOR,E	0.1μF,25V
R5312			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W				NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
R5313			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C2			NCB21EK-104X	CAPACITOR,E	0.1μF,25V
R5319			NRSA02J-221X	MG RESISTOR	220Ω,1/10W				NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
R5332			QRL02DJ-391X	OMF RESISTOR	390Ω,2W	C3			NCB21EK-104X	CAPACITOR,E	0.1μF,25V
R6020			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W				NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
R6021			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C4			NCB21EK-104X	CAPACITOR,E	0.1μF,25V
R6030			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W				NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
R6031			NRSA02J-271X	MG RESISTOR	270Ω,1/10W	C5			QEK0JM-476	E CAPACITOR	47μF,6.3V
R6032			NRSA02J-183X	MG RESISTOR,B,E	18kΩ,1/10W	C6			QDYB1CM-103Y	CAPACITOR	0.01μF,16V
			NRSA02J-472X	MG RESISTOR,A,C,D	4.7kΩ,1/10W	C7			NCB21HK-102X	CAPACITOR	0.001μF,50V
R6033			NRSA02J-182X	MG RESISTOR,A,C,D	1.8kΩ,1/10W	C8			NCB21EK-104X	CAPACITOR	0.1μF,25V
			NRSA02J-183X	MG RESISTOR,B,E	18kΩ,1/10W	C9			QEKJ1HM-225	E CAPACITOR	2.2μF,50V
R6050			NRSA02J-101X	MG RESISTOR,A,C,D	100Ω,1/10W	C10			NDC21HJ-151X	CAPACITOR	150pF,50V
R6051			QRE141J-101Y	RESISTOR,A,C,D	100Ω,1/4W	C11			NCB21EK-104X	CAPACITOR	0.1μF,25V
R6052			NRSA02J-101X	MG RESISTOR,A,C,D	100Ω,1/10W	C12			NDC21HJ-8R0X	CAPACITOR	8pF,50V
R6056			NRSA02J-101X	MG RESISTOR,A,C,D	100Ω,1/10W	C14			NCB21EK-104X	CAPACITOR	0.1μF,25V
R6080			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C15			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7001			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C16			NCB21EK-104X	CAPACITOR	0.1μF,25V
R7002			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C17			QEKJ1HM-335	E CAPACITOR	3.3μF,50V
R7003			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C19			QEKJ1HM-225	E CAPACITOR	2.2μF,50V
R7004			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C20			QEPF1HM-105	NP E CAPACITOR	1μF,50V
R7005			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C21			NCB21EK-104X	CAPACITOR	0.1μF,25V
R7006			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C22			QEKJ0JM-476	E CAPACITOR	47μF,6.3V
R7007			NRSA02J-151X	MG RESISTOR	150Ω,1/10W	C23			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7015			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C24			QCB1HK-104	CAPACITOR	0.1μF,50V
R7020			NRSA02J-103X	MG RESISTOR	10kΩ,1/10W	C25			NDC21HJ-6R0X	CAPACITOR	6pF,50V
R7021			NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W	C26			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7022			NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W	C27			NCB21HK-223X	CAPACITOR	0.022μF,50V
R7023			NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W	C28			QEKJ1HM-335	E CAPACITOR	3.3μF,50V
R7024			NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W	C29			NCB21EK-333X	CAPACITOR	0.033μF,25V
R7030			NRSA02J-103X	MG RESISTOR	10kΩ,1/10W	C30			NCB21CK-474X	CAPACITOR	0.47μF,16V
R7031			NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W	C31			QEKJ0JM-476	E CAPACITOR	47μF,6.3V
R7032			NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W	C32			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7033			NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W	C33			QEKJ1HM-225	E CAPACITOR	2.2μF,50V
R7034			NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W	C34			NCB21EK-104X	CAPACITOR	0.1μF,25V
R7035			NRSA02J-472X	MG RESISTOR,E	4.7kΩ,1/10W	C35			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7036			NRSA02J-682X	MG RESISTOR,E	6.8kΩ,1/10W	C36			QEKJ1HM-475	E CAPACITOR	4.7μF,50V
R7160			NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C37			QEKJ1HM-105	E CAPACITOR	1μF,50V
R7161			NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C38			QEKJ0JM-476	E CAPACITOR	47μF,6.3V
R7162			NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C40			QEKJ1EM-106	E CAPACITOR	10μF,25V
R7163			NRSA02J-750X	MG RESISTOR	75Ω,1/10W	C44			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7202			NRSA02J-221X	MG RESISTOR	220Ω,1/10W	C45			NCB21HK-103X	CAPACITOR	0.01μF,50V
R7203			NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W	C53			NDC21HJ-101X	CAPACITOR	100pF,50V
R7204			QRE121J-100Y	RESISTOR	10Ω,1/2W	C59			NCB21HK-103X	CAPACITOR	0.01μF,50V
VR2251			QVP0039-223Z	TRIM RESISTOR		C61			NCB21HK-103X	CAPACITOR	0.01μF,50V
B5			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C63			NCB21EK-104X	CAPACITOR	0.1μF,25V
B10			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C64			NDC21HJ-220X	CAPACITOR	22pF,50V
B12			NRSA02J-0R0X	MG RESISTOR,A,B,E	0Ω,1/10W	C65			QEKJ1HM-105	E CAPACITOR	1μF,50V
B13			QUY160-180Y	IM BUS WIRE,C,D		C69			NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
B65			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C70			NCB21HK-103X	CAPACITOR,A,B,C,D	0.01μF,50V
B203			QUY160-100Y	IM BUS WIRE		C72			NDC21HJ-470X	CAPACITOR	47pF,50V
B204			QUY160-080Y	IM BUS WIRE		C73			NDC21HJ-120X	CAPACITOR	12pF,50V
B214			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C78			NCB21HK-103X	CAPACITOR,B,E	0.01μF,50V
B302			NRSA02J-0R0X	MG RESISTOR,B,E	0Ω,1/10W	C80			NCB21HK-103X	CAPACITOR	0.01μF,50V
B2051			QUY153-050Y	IM BUS WIRE,B		C84			NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
			QUY160-060Y	IM BUS WIRE,A,C,D		C92			NDC21HJ-330X	CAPACITOR	33pF,50V
B2221			QUY160-140Y	IM BUS WIRE		C103			NCB21HK-103X	CAPACITOR	0.01μF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C106		NCB21HK-821X	CAPACITOR 820pF,50V	C2051		NCB21HK-331X	CAPACITOR 330pF,50V
C108		NDC21HJ-680X	CAPACITOR 68pF,50V	C2052		QFLC1HJ-333Z	F CAPACITOR,E 0.033μF,50V
C110		NDC21HJ-820X	CAPACITOR 82pF,50V	C2053		NCB21HK-332X	CAPACITOR,E 0.0033μF,50V
C114		NDC21HJ-181X	CAPACITOR 180pF,50V			NCB21HK-472X	CAPACITOR,A,B,C,D 0.0047μF,50V
C201		QEKJ0JM-227	E CAPACITOR 220μF,6.3V	C2054		NCB21EK-223X	CAPACITOR,A,B,C,D 0.022μF,25V
C204		NCB21HK-103X	CAPACITOR 0.01μF,50V			NCB21HK-103X	CAPACITOR,E 0.01μF,50V
C206		NDC21HJ-330X	CAPACITOR 33pF,50V	C2055		QEKJ1EM-106	E CAPACITOR 10μF,25V
C207		NDC21HJ-330X	CAPACITOR 33pF,50V	C2061		QFV91HJ-333	F CAPACITOR,E 0.033μF,50V
C209		NCB21CK-474X	CAPACITOR 0.47μF,16V			QFV91HJ-823	F CAPACITOR,A,B,C,D 0.082μF,50V
C210		NDC21HJ-101X	CAPACITOR 100pF,50V	C2062		NCB21HK-332X	CAPACITOR,E 0.0033μF,50V
C211		NDC21HJ-101X	CAPACITOR 100pF,50V	C2063		NCB21HK-103X	CAPACITOR,E 0.01μF,50V
C212		NCB21EK-104X	CAPACITOR 0.1μF,25V	C2064		QEKJ1EM-106	E CAPACITOR,E 10μF,25V
C213		QERF1EM-475	E CAPACITOR 4.7μF,25V	C2201		QEKJ1EM-106	E CAPACITOR 10μF,25V
C214		NCB21CK-224X	CAPACITOR 0.22μF,16V	C2202		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C215		NCB21CK-224X	CAPACITOR 0.22μF,16V	C2203		QEKJ1HM-475	E CAPACITOR 4.7μF,50V
C217		NDC21HJ-560X	CAPACITOR 56pF,50V	C2204		QEKJ0JM-336	E CAPACITOR 33μF,6.3V
C218		QEKJ1HM-105	E CAPACITOR 1μF,50V	C2205		QEKJ1EM-106	E CAPACITOR 10μF,25V
C222		QEKJ1HM-105	E CAPACITOR 1μF,50V	C2206		QEKJ1EM-106	E CAPACITOR 10μF,25V
C225		QERF1AM-227	E CAPACITOR 220μF,10V	C2207		NCB21HK-153X	CAPACITOR 0.015μF,50V
C301		NDC21HJ-151X	CAPACITOR,B,E 150pF,50V	C2208		NCB21HK-153X	CAPACITOR 0.015μF,50V
C302		NCB21CK-105X	CAPACITOR,B,E 1μF,16V	C2209		QERF1CM-106	E CAPACITOR 10μF,16V
C303		NCB21HK-682X	CAPACITOR,B,E 0.0068μF,50V	C2210		QERF1CM-106	E CAPACITOR 10μF,16V
C304		NCB21HK-682X	CAPACITOR,B,E 0.0068μF,50V	C2211		QEKJ0JM-336	E CAPACITOR 33μF,6.3V
C305		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2212		QERF0JM-476	E CAPACITOR 47μF,6.3V
C306		NCB21CK-105X	CAPACITOR,B,E 1μF,16V	C2214		QEKJ1EM-106	E CAPACITOR 10μF,25V
C307		NDC21HJ-151X	CAPACITOR,B,E 150pF,50V	C2215		QEKJ1EM-106	E CAPACITOR 10μF,25V
C308		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2216		QEKJ1CM-476	E CAPACITOR 47μF,16V
C309		NCB21EK-104X	CAPACITOR,B,E 0.1μF,25V	C2218		QEKJ1EM-106	E CAPACITOR,A,C,D 10μF,25V
C310		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2219		QEKJ1CM-226	E CAPACITOR,A,C,D 22μF,16V
C311		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2220		QEKJ1EM-106	E CAPACITOR 10μF,25V
C312		NCB21HK-102X	CAPACITOR,B,E 0.001μF,50V	C2221		NCB21EK-223X	CAPACITOR 0.022μF,25V
C313		NCB21CK-474X	CAPACITOR,B,E 0.47μF,16V	C2222		NCB21HK-103X	CAPACITOR 0.01μF,50V
C315		NCB21CK-105X	CAPACITOR,B,E 1μF,16V	C2223		NCB21EK-473X	CAPACITOR 0.047μF,25V
C316		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2224		NCB21EK-473X	CAPACITOR 0.047μF,25V
C317		NCB21HK-681X	CAPACITOR,B,E 680pF,50V	C2225		QEKJ1HM-105	E CAPACITOR 1μF,50V
C318		NCB21EK-223X	CAPACITOR,B,E 0.022μF,25V	C2226		QEKJ1HM-105	E CAPACITOR 1μF,50V
C319		NCB21CK-105X	CAPACITOR,B,E 1μF,16V	C2227		QERF1CM-106	E CAPACITOR 10μF,16V
C320		NCB21HK-103X	CAPACITOR,B,E 0.01μF,50V	C2230		QEKJ1EM-106	E CAPACITOR 10μF,25V
C321		NDC21HG-301X	CAPACITOR,B,E 300pF,50V	C2231		QEKJ1EM-106	E CAPACITOR 10μF,25V
C322		NCB21CK-474X	CAPACITOR,B,E 0.47μF,16V	C2251		NCB21HK-103X	CAPACITOR 0.01μF,50V
C323		QEKJ0JM-476	E CAPACITOR,B,E 47μF,6.3V	C2252		NCB21HK-103X	CAPACITOR 0.01μF,50V
C324		NDC21HJ-390X	CAPACITOR,B,E 39pF,50V	C2253		NCB21HK-103X	CAPACITOR 0.01μF,50V
C401		NCB21HK-103X	CAPACITOR,E 0.01μF,50V	C2254		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C402		NCB21HK-223X	CAPACITOR,E 0.022μF,50V	C2255		NCB21HK-103X	CAPACITOR 0.01μF,50V
C403		NDC21HJ-131X	CAPACITOR,E 130pF,50V	C2256		NCB21HK-103X	CAPACITOR 0.01μF,50V
C404		NDC21HJ-470X	CAPACITOR,E 47pF,50V	C2257		NCB21HK-103X	CAPACITOR 0.01μF,50V
C406		NCB21HK-102X	CAPACITOR,E 0.001μF,50V	C2258		NDC21HJ-181X	CAPACITOR 180pF,50V
C407		NDC21HJ-150X	CAPACITOR,E 15pF,50V	C2259		QEKJ1HM-334	E CAPACITOR 0.33μF,50V
C2001		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C2261		NDC21HJ-101X	CAPACITOR 100pF,50V
C2002		QEKJ1HM-105	E CAPACITOR 1μF,50V	C2262		NDC21HJ-101X	CAPACITOR 100pF,50V
C2003		QEKJ0JM-476	E CAPACITOR 47μF,6.3V	C3008		NDC21HJ-101X	CAPACITOR 100pF,50V
C2005		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3011		QETL0JM-338	E CAPACITOR 3300μF,6.3V
C2006		NCB21HK-123X	CAPACITOR 0.012μF,50V	C3012		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C2007		QEKJ1CM-226	E CAPACITOR 22μF,16V	C3014		QERF0JM-476	E CAPACITOR 47μF,6.3V
C2008		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3015		NCB21EK-104X	CAPACITOR 0.1μF,25V
C2009		NCB21HK-102X	CAPACITOR 0.001μF,50V	C3016		NCB21EK-473X	CAPACITOR 0.047μF,25V
C2010		NCB21HK-152X	CAPACITOR 0.0015μF,50V	C3020		NDC21HJ-101X	CAPACITOR 100pF,50V
C2011		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3021		NDC21HJ-101X	CAPACITOR 100pF,50V
C2012		QEKJ1HM-475	E CAPACITOR 4.7μF,50V	C3022		NCB21EK-104X	CAPACITOR 0.1μF,25V
C2013		NCB21HK-331X	CAPACITOR 330pF,50V	C3024		NDC21HJ-120X	CAPACITOR,B,E 12pF,50V
C2017		NCB21HK-682X	CAPACITOR 0.0068μF,50V			NDC21HJ-220X	CAPACITOR,A,C,D 22pF,50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION		
			C3025	QAT3725-300Z	TRIM CAPACITOR,A,C,D				L5	QQR0521-012Z	NOISE FILTER	
			C3026	NCB21HK-103X	CAPACITOR	0.01μF,50V			L12	QQR0967-001	COIL	12μH
			C3027	QEKJ1EM-106	E CAPACITOR	10μF,25V			L13	QQL071J-330Y	COIL	33μH
			C3030	QEKJ0JM-476	E CAPACITOR	47μF,6.3V			L15	QQL29BJ-100Z	COIL	10μH
			C3031	NCB21EK-473X	CAPACITOR	0.047μF,25V			L18	QQL071J-220Y	COIL	22μH
			C3033	NCB21EK-473X	CAPACITOR	0.047μF,25V			L19	QQL071J-120Y	COIL	12μH
			C3036	NDC21HJ-180X	CAPACITOR	18pF,50V			L20	QUY153-050Y	IM BUS WIRE	
			C3037	NDC21HJ-120X	CAPACITOR	12pF,50V			L22	QQL231J-1R0Y	COIL	1.0μH
			C3040	NCB21HK-103X	CAPACITOR	0.01μF,50V			L24	QQL071J-270Y	COIL	27μH
			C3041	NDC21HJ-150X	CAPACITOR,B,E	15pF,50V			L27	QQL071J-330Y	COIL	33μH
			C3050	NCF21EZ-104X	CAPACITOR	0.1μF,25V			L28	QQL071J-680Y	COIL	68μH
			C3071	QEKJ1CM-336	E CAPACITOR	33μF,16V			L201	QQL29BK-1R0Z	COIL	1.0μH
			C4002	NCB21EK-104X	CAPACITOR	0.1μF,25V			L202	QUY153-050Y	IM BUS WIRE	
			C4004	QEKJ1AM-226	E CAPACITOR	22μF,10V			L203	QQL29BJ-220Z	COIL	22μH
			C4005	NCB21HK-222X	CAPACITOR	0.0022μF,50V			L204	QQL29BJ-100Z	COIL	10μH
			C4006	QEKJ0JM-476	E CAPACITOR	47μF,6.3V			L206	QQL071J-220Y	COIL	22μH
			C4007	NCB21HK-102X	CAPACITOR,E	0.001μF,50V			L301	QQL29BJ-100Z	COIL,B,E	10μH
			C4008	NCB21AK-105X	CAPACITOR	1μF,10V			L302	QQL231J-6R8Y	COIL,B,E	6.8μH
			C4009	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W			L303	QQL231J-270Y	COIL,B,E	27μH
			C4010	NCB21EK-223X	CAPACITOR	0.022μF,25V			L304	QQL29BJ-101Z	COIL,B,E	100μH
			C4011	NCB21EK-104X	CAPACITOR	0.1μF,25V			L401	QQL071J-150Y	COIL,E	15μH
			C4012	QERF1HM-105	E CAPACITOR	1μF,50V			L402	QUY153-050Y	IM BUS WIRE,E	
			C4014	NDC21HJ-101X	CAPACITOR	100pF,50V			L2001	QUY153-050Y	IM BUS WIRE	
			C4015	NCB21HK-102X	CAPACITOR	0.001μF,50V			L2201	QUY153-050Y	IM BUS WIRE	
			C4031	QEKJ1CM-336	E CAPACITOR	33μF,16V			L2251	QQL29BJ-100Z	COIL	10μH
△			C5001	QFZ9072-473	F CAPACITOR	0.047μF,250V			L2252	QQL29BJ-151Z	COIL	150μH
△			C5004	QCZ9071-222	CAPACITOR	0.0022μF,250V			L4001	QUY153-050Y	IM BUS WIRE	
			C5006	QEZ0375-686	E CAPACITOR	68μF,400V			L5201	PELN1184	COIL	33μH
			C5101	QCZ0212-472	CAPACITOR	0.0047μF,1kV			L5202	PELN1184	COIL	33μH
			C5102	QCZ0302-330Z	CAPACITOR	33pF,1kV			L6001	QQL29BJ-100Z	COIL	10μH
			C5104	QEKJ1HM-105	E CAPACITOR	1μF,50V			L6002	QQL29BJ-100Z	COIL	10μH
			C5105	QFN31HJ-153	F CAPACITOR	0.015μF,50V			L6501	QUY153-050Y	IM BUS WIRE	
			C5106	QCB1HJ-271	CAPACITOR	270pF,50V			L7201	QQL29BJ-100Z	COIL	10μH
			C5107	QFV91HJ-104	F CAPACITOR	0.1μF,50V			X1	QAX0576-001Z	CRYSTAL RESONATOR	
			C5202	QETN1CM-108	E CAPACITOR	1000μF,16V			X2	QCB1HK-103	CAPACITOR,C,D	0.01μF,50V
			C5203	QEMT1AM-128	E CAPACITOR	1200μF,10V			X3001	QAX0444-001	CRYSTAL RESONATOR,B,E	
			C5204	QETJ2AM-475	E CAPACITOR	4.7μF,100V				QAX0445-001	CRYSTAL RESONATOR,A,C,D	
			C5206	QEKJ1CM-476	E CAPACITOR	47μF,16V			X3002	QAX0527-001	CRYSTAL RESONATOR	
			C5207	QEKJ1CM-107	E CAPACITOR	100μF,16V			S3001	QSW0602-004	PUSH SWITCH	
			C5301	QEKJ1CM-107	E CAPACITOR	100μF,16V			S3002	QSW0602-004	PUSH SWITCH	
			C5303	QEKJ1CM-107	E CAPACITOR	100μF,16V			S7001	QSW0456-002Z	TACT SWITCH	
			C5305	QFVF1HJ-274Z	F CAPACITOR	0.27μF,50V			S7002	QSW0456-002Z	TACT SWITCH	
			C5307	QEKJ1CM-476	E CAPACITOR	47μF,16V			S7004	QSW0456-002Z	TACT SWITCH	
			C5308	QEKJ1CM-107	E CAPACITOR	100μF,16V			S7006	QSW0456-002Z	TACT SWITCH	
			C6008	NCB21HK-103X	CAPACITOR,B,E	0.01μF,50V			S7008	QSW0456-002Z	TACT SWITCH	
			C6013	NCB21HK-103X	CAPACITOR	0.01μF,50V			S7010	QSW0456-002Z	TACT SWITCH	
			C6032	NCB21EK-473X	CAPACITOR,A,C,D	0.047μF,25V			S7012	QSW0456-002Z	TACT SWITCH	
			C6037	QEKJ1EM-106	E CAPACITOR	10μF,25V			S7016	QSW0456-002Z	TACT SWITCH	
			C6055	NDC21HJ-220X	CAPACITOR,A,C,D	22pF,50V			K2001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			C6056	NDC21HJ-470X	CAPACITOR,A,C,D	47pF,50V			K2002	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			C6501	QEKJ0JM-227	E CAPACITOR,B,E	220μF,6.3V			K2003	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
				QEKJ1EM-106	E CAPACITOR,A,C,D	10μF,25V			K2004	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			C6502	NCB21HK-103X	CAPACITOR	0.01μF,50V			K2251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			C7011	QEKJ0JM-476	E CAPACITOR	47μF,6.3V			K2252	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			C7165	NCB21HK-681X	CAPACITOR	680pF,50V			K2253	NQR0007-001X	FERRATE BEADS	
			C7167	NCB21HK-681X	CAPACITOR	680pF,50V			K5101	QQR0678-001Z	FERRATE BEADS	
			C7202	QETJ0JM-477	E CAPACITOR	470μF,6.3V			K5102	QUY153-050Y	IM BUS WIRE	
			L1	QQL29BJ-100Z	COIL	10μH			PC3001	RPI-304J	IC(PHOTO SENSOR)	
			L2	QQL071J-121Y	COIL	120μH			PC3002	RPI-304J	IC(PHOTO SENSOR)	
			L3	QQL29BJ-100Z	COIL	10μH		△	PC5101	PS2561L1-1/L/	IC(PHOTO COUPLE)	
			L4	QQL29BJ-100Z	COIL	10μH			T2051	PELN0832	OSC TRANSFORMER,A,B,C,D	
										PELN0860	OSC TRANSFORMER,E	

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
		T2052	PELN0861	OSC TRANSFORMER,E
△		T5001	QQS0083-001	SW TRANSF
		TU6001	QAU0261-002	TUNER,A,C,D
			QAU0266-001	TUNER,B,E
		SD1	LP21105-001A	SHIELD CASE
		DI7001	LTG-0126M-03J	LE DIODE
		ET1	PQ21623-2-5	EARTH PLATE(RF)
		HS1	LP40090-001A	HEAT SINK,Q5101
		JS3001	QSW0954-002	ROTARY ENCODER
		J7105	QNN0381-002	PIN JACK
		OT1	QYTD5F3010Z	SCREW,X2,TERMINAL
		OT2	PU59915-110	#500SPACER0.014
		OT3	QYTDST3006Z	SCREW,Q5101
		OT4	PM30130-001	SPACER,B,E
		FC5001	QNG0006-001Z	FUSE CLIP
		FC5002	QNG0006-001Z	FUSE CLIP
△		LF5002	QQR0978-001	LINE FILTER
		WR6501	QUB321-16A2A2	SIN TWIST WIRE,B,E
		CN1	QGF1201C2-09	FPC CONNECTOR,(1-9)DRUM,A,B,C,D
			QGF1201C2-11	FPC CONNECTOR,(1-11)DRUM,E
		CN901	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL
		CN902	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL
		CN903	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL
		CN904	QGB2024K1-11S	CONNECTOR,(1-11)TERMINAL
		CN905	QGB2024K1-09S	CONNECTOR,(1-9)TERMINAL
		CN2001	QGF1207C1-06	FPC CONNECTOR,(1-6)AC/HEAD
		CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD
		CN3001	QGB2032M4-12	CONNECTOR,(1-12)CAPSTAN MOTOR
△		CN5001	QGA7901C3-02	CONNECTOR,(1-2)AC IN
		CN7001	QGF1207C1-04	FPC CONNECTOR,(3-6)ADV.JOG,A,B,C,D
			QGF1207C1-06	FPC CONNECTOR,(1-6)ADV.JOG,E
△		CP3001	QMFZ050-1R5X-E	FUSE T1.5A
△		CP4001	QMFZ050-1R5X-E	FUSE T1.5A
△		F5001	QMF51E2-2R0J1	FUSE T2.0A,AC250V

2D D BOARD ASSEMBLY <05> [HR-S6950EU/S6955MS/S7955MS]

PW1	LPA10162-02C	2D DIGITAL BOARD ASSY	
IC1201	JCP8036	IC	
Q1201	2SC1317/RS/-T	TRANSISTOR	
Q1202	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1203	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1204	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
Q1205	2SC4081/S/-X	TRANSISTOR	
D1201	RD4.3ES/B3/-T2	ZENER DIODE	
R1201	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
R1202	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R1203	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R1204	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R1205	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1206	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R1207	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
R1208	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R1209	NRSA02J-180X	MG RESISTOR	18Ω,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
		R1210	NRVA02D-393X	CMF RESISTOR 39kΩ,1/10W
		R1211	NRVA02D-153X	CMF RESISTOR 15kΩ,1/10W
		R1212	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1213	NRSA02J-331X	MG RESISTOR 330Ω,1/10W
		R1214	NRSA02J-121X	MG RESISTOR 120Ω,1/10W
		R1215	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1216	NRSA02J-331X	MG RESISTOR 330Ω,1/10W
		R1217	NRVA02D-101X	CMF RESISTOR 100Ω,1/10W
		R1218	NRVA02D-301X	CMF RESISTOR 300Ω,1/10W
		R1220	NRSA02J-561X	MG RESISTOR 560Ω,1/10W
		R1222	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
		R1224	NRSA02J-561X	MG RESISTOR 560Ω,1/10W
		VR1201	QUY153-050Y	IM BUS WIRE
		C1201	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		C1208	NDC21HJ-221X	CAPACITOR 220pF,50V
		C1210	NDC21HJ-330X	CAPACITOR 33pF,50V
		C1211	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		C1212	NCB21HK-102X	CAPACITOR 0.001μF,50V
		C1213	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1214	NCF21CZ-105X	CAPACITOR 1μF,16V
		C1215	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		C1216	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1217	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1218	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1219	NCF21CZ-105X	CAPACITOR 1μF,16V
		C1220	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		C1222	NDC21HJ-820X	CAPACITOR 82pF,50V
		C1223	NDC21HJ-270X	CAPACITOR 27pF,50V
		C1225	NDC21HJ-820X	CAPACITOR 82pF,50V
		C1226	NDC21HJ-270X	CAPACITOR 27pF,50V
		C1227	NCB21EK-104X	CAPACITOR 0.1μF,25V
		C1228	QEKJ1EM-475	E CAPACITOR 4.7μF,25V
		C1229	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1230	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1231	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1232	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1233	QDYB1CM-103Y	CAPACITOR 0.01μF,16V
		C1234	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1235	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		C1236	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1237	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1238	NDC21HJ-180X	CAPACITOR 18pF,50V
		C1239	NDC21HJ-560X	CAPACITOR 56pF,50V
		C1243	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1244	QEKJ1EM-475	E CAPACITOR 4.7μF,25V
		C1245	NDC21HJ-150X	CAPACITOR 15pF,50V
		C1246	QEKJ0JM-476	E CAPACITOR 47μF,6.3V
		L1201	QQL071J-1R0Y	COIL 1.0μH
		L1202	QRE141J-181Y	RESISTOR 180Ω,1/4W
		L1203	QQL29BJ-331Z	COIL 330μH
		L1204	QQL29BJ-221Z	COIL 220μH
		L1205	QQL071J-6R8Y	COIL 6.8μH
		L1206	QQL071J-6R8Y	COIL 6.8μH
		L1207	QQL29BJ-221Z	COIL 220μH
		L1208	QQL071J-150Y	COIL 15μH
		LC1201	QQL29BJ-101Z	COIL 100μH
		SD1	LP31098-001B	SHIELD CASE(DEG)
		BK1	LP40425-001A	BRACKET(BOARD)
		CN1201	QGG2502K1-12	HEADER PIN,(1-12)MAIN

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	

3D D/2M BOARD ASSEMBLY <05> [HR-S7950EU/S7955EK]					
		PW1	LPA10105-07A	3D D/2M BOARD ASSY	
		IC1401	JCP8026	IC	
△		Q1401	2SC1317/RS-T	TRANSISTOR	
		Q1402	2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q1406	2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q1408	2SC4081/S/-X	TRANSISTOR	
		Q1410	2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q1412	2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q1418	2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q1419	DTC124TU	DIGI TRANSISTOR	
		D1401	RD4.3ES/B3/-T2	ZENER DIODE	
			or MTZJ4.3B	ZENER DIODE	
		D1402	1SS133	DIODE	
			or 1N4148M	DIODE	
		R1401	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R1402	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R1404	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R1406	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R1410	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R1411	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R1413	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R1415	NRVA02D-221X	CMF RESISTOR	220Ω,1/10W
		R1416	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R1417	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R1418	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R1421	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R1426	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R1427	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
		R1428	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R1429	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R1430	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R1431	NRSA02J-821X	MG RESISTOR	820Ω,1/10W
		R1433	NRSA02J-510X	MG RESISTOR	51Ω,1/10W
		R1434	NRVA02D-153X	CMF RESISTOR	15kΩ,1/10W
		R1435	NRVA02D-473X	CMF RESISTOR	47kΩ,1/10W
		R1436	NRVA02D-393X	CMF RESISTOR	39kΩ,1/10W
		R1437	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R1438	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R1439	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R1440	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R1445	NRVA02D-393X	CMF RESISTOR	39kΩ,1/10W
		R1446	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1447	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1448	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1449	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1450	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1452	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R1453	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1455	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R1459	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R1460	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		VR1401	QUY153-050Y	IM BUS WIRE	

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
		B1401	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B1412	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C1401	QEKJ1CM-336	E CAPACITOR	33μF,16V
		C1403	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
		C1404	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1405	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1406	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1407	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1408	NDC21HJ-330X	CAPACITOR	33pF,50V
		C1410	QEKJ1HM-475	E CAPACITOR	4.7μF,50V
		C1411	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1412	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1413	NDC21HJ-330X	CAPACITOR	33pF,50V
		C1415	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1416	QEKJ1EM-106	E CAPACITOR	10μF,25V
		C1417	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1421	NDC21HJ-330X	CAPACITOR	33pF,50V
		C1422	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1423	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1424	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1425	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1426	NDC21HJ-390X	CAPACITOR	39pF,50V
		C1428	NDC21HJ-220X	CAPACITOR	22pF,50V
		C1429	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
		C1430	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1432	NCF21CZ-105X	CAPACITOR	1μF,16V
		C1433	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1435	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1436	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1437	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1438	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1439	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1440	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1441	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1442	NCF21CZ-105X	CAPACITOR	1μF,16V
		C1444	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1445	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1446	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C1447	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1448	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C1449	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1450	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1451	QEKJ1HM-475	E CAPACITOR	4.7μF,50V
		C1452	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1453	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1454	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1463	QEKJ0JM-336	E CAPACITOR	33μF,6.3V
		C1468	NDC21HJ-101X	CAPACITOR	100pF,50V
		C1470	NDC21HJ-330X	CAPACITOR	33pF,50V
		C1471	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1472	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1473	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		L1401	QUY153-050Y	IM BUS WIRE	
		L1402	QQL071J-6R8Y	COIL	6.8μH
		L1403	QQL071J-6R8Y	COIL	6.8μH
		L1404	QQL071J-6R8Y	COIL	6.8μH
		L1405	QQL29BJ-100Z	COIL	10μH
		L1406	QQL071J-330Y	COIL	33μH
		L1407	QQL29BJ-100Z	COIL	10μH
		L1409	QQL071J-1R0Y	COIL	1.0μH
△		LC1401	QQL29BJ-101Z	COIL	100μH

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
LC1402		QQR0521-006Z	NOISE FILTER
SD1		LP30706-001C	S.FRAME(S-VHS)
SD2		LP30684-001A	S.CASE(S-VHS)
CN1401		QGG2502K1-17	HEADER PIN,(1-17)MAIN

TERMINAL BOARD ASSEMBLY <06>

PW1	LPA10138-07A	TERMINAL BOARD ASSY,A
	LPA10138-08A	TERMINAL BOARD ASSY,C,D
	LPA10138-09A	TERMINAL BOARD ASSY,E
	LPA10138-11A	TERMINAL BOARD ASSY,B
IC501	JCP8018	IC
	or JCP8028	IC
	or JCP8028-01	IC
	or JCP8038	IC
IC502	VC2076DP	IC
IC901	BH7636S	IC
Q901	UN5211	DIGI TRANSISTOR
	or DTC114EU	DIGI TRANSISTOR
	or PDTC114EU	DIGI TRANSISTOR
	or RN1302	DIGI TRANSISTOR
Q902	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q903	2SB1218A/QR/-X	TRANSISTOR,C,D,E
	or 2PA1576/R/-X	TRANSISTOR,C,D,E
	or 2SA1576A/QR/-X	TRANSISTOR,C,D,E
Q904	2SB1218A/QR/-X	TRANSISTOR,C,D,E
	or 2PA1576/R/-X	TRANSISTOR,C,D,E
	or 2SA1576A/QR/-X	TRANSISTOR,C,D,E
Q905	UN521E	DIGI TRANSISTOR
	or DTC144WU	DIGI TRANSISTOR
	or PDTC144WU	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
Q906	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q907	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q908	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q909	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q910	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q911	UN521E	DIGI TRANSISTOR
	or DTC144WU	DIGI TRANSISTOR
	or PDTC144WU	DIGI TRANSISTOR
	or RN1309	DIGI TRANSISTOR
Q912	UN5215	DIGI TRANSISTOR
	or DTC114TU	DIGI TRANSISTOR
	or PDTC114TU	DIGI TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
		or RN1311	TRANSISTOR
R503		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R504		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R505		NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
R506		NRSA02J-391X	MG RESISTOR 390Ω,1/10W
R507		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R508		NRSA02J-151X	MG RESISTOR 150Ω,1/10W
R509		NRSA02J-162X	MG RESISTOR 1.6kΩ,1/10W
R510		NRVA02D-102X	CMF RESISTOR 1kΩ,1/10W
R511		NRVA02D-471X	CMF RESISTOR 470Ω,1/10W
R512		NRVA02D-102X	CMF RESISTOR 1kΩ,1/10W
R513		NRVA02D-152X	CMF RESISTOR 1.5kΩ,1/10W
R514		NRVA02D-332X	CMF RESISTOR 3.3kΩ,1/10W
R515		NRVA02D-332X	CMF RESISTOR 3.3kΩ,1/10W
R516		QUY160-100Y	IM BUS WIRE
R517		QUY160-100Y	IM BUS WIRE
R525		QRE141J-125Y	RESISTOR 1.2MΩ,1/4W
R527		NRSA02J-332X	MG RESISTOR,A,C,D 3.3kΩ,1/10W
R531		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R532		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R533		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R534		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R535		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R536		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R901		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R902		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R903		QRE141J-680Y	RESISTOR 68Ω,1/4W
R904		NQL402M-4R7X	COIL 4.7μH
R905		NQL402M-4R7X	COIL 4.7μH
R906		QQL231J-100Y	COIL 10μH
R907		QQL231J-100Y	COIL 10μH
R908		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R909		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R910		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R911		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R912		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R913		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R914		QQL231J-100Y	COIL 10μH
R915		QQL231J-100Y	COIL 10μH
R916		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R917		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R918		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R919		QRE141J-101Y	RESISTOR,C,D,E 100Ω,1/4W
R920		QRE141J-101Y	RESISTOR,C,D,E 100Ω,1/4W
R921		QRE121J-391Y	RESISTOR,C,D,E 390Ω,1/2W
R922		QRE121J-391Y	RESISTOR,C,D,E 390Ω,1/2W
R923		NRSA02J-750X	MG RESISTOR,C,D,E 75Ω,1/10W
R924		NRSA02J-750X	MG RESISTOR,C,D,E 75Ω,1/10W
R929		NRSA02J-820X	MG RESISTOR 82Ω,1/10W
R930		NRSA02J-750X	MG RESISTOR 75Ω,1/10W
R931		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R932		NRSA02J-511X	MG RESISTOR 510Ω,1/10W
R933		NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R934		QRE141J-101Y	RESISTOR 100Ω,1/4W
R935		QRE141J-101Y	RESISTOR 100Ω,1/4W
R936		QRE141J-101Y	RESISTOR 100Ω,1/4W
R937		QRE141J-101Y	RESISTOR 100Ω,1/4W
R938		QRE141J-101Y	RESISTOR 100Ω,1/4W
R939		QRE141J-101Y	RESISTOR 100Ω,1/4W
R940		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R941		NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
R942			NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W	C572			NDC21HJ-680X	CAPACITOR	68pF,50V
R943			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C573			NDC21HJ-680X	CAPACITOR	68pF,50V
R944			NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W	C575			NDC21HJ-101X	CAPACITOR	100pF,50V
R945			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C901			NCB21HK-331X	CAPACITOR	330pF,50V
R946			NRSA02J-561X	MG RESISTOR	560Ω,1/10W	C902			NCB21HK-331X	CAPACITOR	330pF,50V
R947			NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W	C903			NCB21HK-471X	CAPACITOR	470pF,50V
R949			QRE121J-331Y	RESISTOR	330Ω,1/2W	C904			NCB21HK-471X	CAPACITOR	470pF,50V
R951			NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W	C905			NCB21HK-331X	CAPACITOR	330pF,50V
R952			NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W	C906			NCB21HK-331X	CAPACITOR	330pF,50V
R953			NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W	C907			NCB21HK-471X	CAPACITOR	470pF,50V
R964			NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C908			NCB21HK-471X	CAPACITOR	470pF,50V
C501			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C910			NCB21HK-102X	CAPACITOR	0.001μF,50V
C502			QEKJ1HM-475	E CAPACITOR	4.7μF,50V	C912			NCB21HK-102X	CAPACITOR	0.001μF,50V
C503			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C913			NCB21HK-103X	CAPACITOR,C,D,E	0.01μF,50V
C504			NCB21EK-104X	CAPACITOR	0.1μF,25V	C914			NCB21HK-103X	CAPACITOR,C,D,E	0.01μF,50V
C505			QEKJ1HM-475	E CAPACITOR	4.7μF,50V	C915			NCB21HK-103X	CAPACITOR	0.01μF,50V
C506			NCB21HK-103X	CAPACITOR	0.01μF,50V	C916			NCB21HK-223X	CAPACITOR	0.022μF,50V
C507			QEKJ0JM-476	E CAPACITOR	47μF,6.3V	C917			NCB21HK-223X	CAPACITOR	0.022μF,50V
C508			QEKJ1HM-474	E CAPACITOR	0.47μF,50V	C918			QCB1HK-223	CAPACITOR	0.022μF,50V
C509			QEKJ1CM-106	E CAPACITOR	10μF,16V	C921			NDC21HJ-330X	CAPACITOR	33pF,50V
C510			QEKJ0JM-476	E CAPACITOR	47μF,6.3V	C923			QEKJ1CM-476	E CAPACITOR	47μF,16V
C511			NCB21HK-103X	CAPACITOR	0.01μF,50V	C924			NCB21HK-103X	CAPACITOR	0.01μF,50V
C512			NCB21HK-103X	CAPACITOR	0.01μF,50V	C925			NCB21HK-223X	CAPACITOR	0.022μF,50V
C513			QEKJ1HM-475	E CAPACITOR	4.7μF,50V	C927			QEKJ1CM-476	E CAPACITOR	47μF,16V
C514			NCB21HK-103X	CAPACITOR	0.01μF,50V	C928			NCB21HK-103X	CAPACITOR	0.01μF,50V
C515			NCB21HK-103X	CAPACITOR	0.01μF,50V	C931			QEKJ1EM-106	E CAPACITOR	10μF,25V
C516			NCB21HK-103X	CAPACITOR	0.01μF,50V	C935			NCB21HK-471X	CAPACITOR	470pF,50V
C518			NCB21EK-104X	CAPACITOR	0.1μF,25V	C936			NCB21HK-471X	CAPACITOR	470pF,50V
C519			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C937			NCB21HK-331X	CAPACITOR	330pF,50V
C520			QEKJ1HM-475	E CAPACITOR	4.7μF,50V	C938			NCB21HK-331X	CAPACITOR	330pF,50V
C521			QEKJ1HM-475	E CAPACITOR	4.7μF,50V	C939			NCB21HK-471X	CAPACITOR	470pF,50V
C522			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C940			NCB21HK-471X	CAPACITOR	470pF,50V
C523			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C941			QEKJ0JM-227	E CAPACITOR,C,D,E	220μF,6.3V
C524			NDC21HG-301X	CAPACITOR	300pF,50V	C942			QEKJ1CM-476	E CAPACITOR,C,D,E	47μF,16V
C525			NDC21HG-301X	CAPACITOR	300pF,50V	C943			QEKJ1CM-107	E CAPACITOR	100μF,16V
C526			NDC21HJ-101X	CAPACITOR	100pF,50V	C945			QEKJ1EM-106	E CAPACITOR	10μF,25V
C527			NDC21HJ-181X	CAPACITOR	180pF,50V	C946			QEKJ1EM-106	E CAPACITOR	10μF,25V
C528			NDC21HG-271X	CAPACITOR	270pF,50V	C950			QEKJ0JM-227	E CAPACITOR,C,D,E	220μF,6.3V
C529			NDC21HG-820X	CAPACITOR	82pF,50V	C951			QEK1CM-476	E CAPACITOR	47μF,16V
C530			NDC21HG-221X	CAPACITOR	220pF,50V	C958			NCB21HK-331X	CAPACITOR	330pF,50V
C531			NDC21HG-301X	CAPACITOR	300pF,50V	C959			NCB21HK-331X	CAPACITOR	330pF,50V
C532			NDC21HG-301X	CAPACITOR	300pF,50V	L501			QQL29BJ-100Z	COIL	10μH
C533			NCB21HK-103X	CAPACITOR	0.01μF,50V	L503			QQL29BJ-100Z	COIL	10μH
C534			QEKJ0JM-476	E CAPACITOR	47μF,6.3V	L504			QQL29BJ-100Z	COIL	10μH
C535			NCB21HK-103X	CAPACITOR	0.01μF,50V	L505			QUY153-050Y	IM BUS WIRE	
C551			QEKJ1HM-105	E CAPACITOR	1μF,50V	L901			QQL231J-R22Y	COIL	0.22μH
C553			QCB1HK-103	CAPACITOR	0.01μF,50V	L902			QQL071J-1R0Y	COIL	1.0μH
C554			QEKJ1HM-105	E CAPACITOR	1μF,50V	L903			QQL071J-150Y	COIL	15μH
C556			QCB1HK-103	CAPACITOR	0.01μF,50V	L904			QQL071J-150Y	COIL	15μH
C557			QEKJ1HM-105	E CAPACITOR	1μF,50V	L906			QUY153-050Y	IM BUS WIRE,C,D,E	
C559			NCB21HK-103X	CAPACITOR	0.01μF,50V	L907			QUY153-050Y	IM BUS WIRE	
C560			QEKJ1HM-105	E CAPACITOR	1μF,50V	L910			QQL071J-1R0Y	COIL	1.0μH
C561			QEKJ1HM-105	E CAPACITOR	1μF,50V	L913			QQL071J-4R7Y	COIL	4.7μH
C562			QEKJ1HM-105	E CAPACITOR,B,E	1μF,50V	L914			QQL071J-4R7Y	COIL	4.7μH
C563			NCB21HK-103X	CAPACITOR,A,C,D	0.01μF,50V	L915			QQL071J-4R7Y	COIL	4.7μH
C564			NCB21HK-103X	CAPACITOR,B,E	0.01μF,50V	L916			QQL071J-4R7Y	COIL	4.7μH
C566			NCB21HK-103X	CAPACITOR,B,E	0.01μF,50V	L917			QQL071J-4R7Y	COIL	4.7μH
C568			NDC21HJ-680X	CAPACITOR	68pF,50V	L918			QQL071J-4R7Y	COIL	4.7μH
C569			NDC21HJ-680X	CAPACITOR	68pF,50V	L919			QQL071J-4R7Y	COIL	4.7μH
C570			NDC21HJ-680X	CAPACITOR	68pF,50V	L920			QQL071J-4R7Y	COIL	4.7μH
C571			NDC21HJ-680X	CAPACITOR	68pF,50V	ET1			LP30918-001A	EARTH PLATE	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	ET2	LP30915-001A	EARTH PLATE
△	TB1	LP21028-001A	TERMINAL BOARD,A,B
△		LP21028-002A	TERMINAL BOARD,C,D,E
	J901	PEMC1177	RGB21PIN SOCKET
	J902	PEMC1177	RGB21PIN SOCKET
	J904	QND0084-001	S JACK,C,D,E
	J915	QNN0418-003	PIN JACK
	J916	QNN0418-002	PIN JACK
	J921	PU60659	MINI JACK
	J922	PU60659	MINI JACK,C,D,E
	OT1	QYTDSF3008Z	SCREW,X6
	CN511	QGF1208F1-11	FPC CONNECTOR,(1-11)S/P CONV.,B,E
	CN911	QGB2024J1-10S	CONNECTOR,(1-10)MAIN
	CN912	QGB2024J1-12S	CONNECTOR,(1-12)MAIN
	CN913	QGB2024J1-10S	CONNECTOR,(1-10)MAIN
	CN914	QGB2024J1-11S	CONNECTOR,(1-10)MAIN
	CN915	QGB2024J1-09S	CONNECTOR,(1-9)MAIN
	CN916	QGF1208F1-04	FPC CONNECTOR,(1-4)FROM S IN

A/C HEAD BOARD ASSEMBLY <12>

PW1	LPA10158-01A1	A/C HEAD BOARD ASSY
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DEMOD BOARD ASSEMBLY <14>

PW1	LPA10094-09A	DEMOD BOARD ASSY,A,C,D	
	LPA10094-10B	DEMOD BOARD ASSY,B,E	
IC6701	MSP3417D	IC	
	or MSP3417DG3	IC	
	or MSP3417G	IC	
Q6701	2SC3936/BC/-X	TRANSISTOR	
D6701	1SS133	DIODE	
	or 1N4148M	DIODE	
R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R6703	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6705	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
R6707	NQR0200-003X	FERRATE BEADS	
R6708	NQR0200-003X	FERRATE BEADS	
R6709	NQR0200-003X	FERRATE BEADS	
R6710	NQR0200-003X	FERRATE BEADS	
R6711	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6713	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6715	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
R6716	NQR0200-003X	FERRATE BEADS	
R6719	QRE141J-103Y	RESISTOR	10kΩ,1/4W
R6720	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
C6701	NCB21HK-103X	CAPACITOR	0.01μF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	C6704	NCB21HK-103X	CAPACITOR 0.01μF,50V
	C6707	NDC21HJ-470X	CAPACITOR 47pF,50V
	C6708	NDC21HJ-7R0X	CAPACITOR 7pF,50V
	C6709	NDC21HJ-3R0X	CAPACITOR 3pF,50V
	C6713	NCF21CZ-224X	CAPACITOR 0.22μF,16V
	C6714	NCB21HK-222X	CAPACITOR,A,C,D 0.0022μF,50V
		NCB21HK-682X	CAPACITOR,B,E 0.0068μF,50V
	C6715	QEKJ1HM-225	E CAPACITOR 2.2μF,50V
	C6716	NCB21HK-222X	CAPACITOR,A,C,D 0.0022μF,50V
		NCB21HK-682X	CAPACITOR,B,E 0.0068μF,50V
	C6717	QEKJ1HM-225	E CAPACITOR 2.2μF,50V
	C6719	QEKJ1EM-106	E CAPACITOR 10μF,25V
	C6720	QEKJ1EM-106	E CAPACITOR 10μF,25V
	C6721	NCB21HK-103X	CAPACITOR 0.01μF,50V
	C6723	NCB21HK-103X	CAPACITOR 0.01μF,50V
	C6724	QEKJ1HM-225	E CAPACITOR,B,E 2.2μF,50V
	L6701	QUY153-050Y	IM BUS WIRE
	X6701	QAX0443-001	CRYSTAL RESONATOR
	K6701	NRSA02J-330X	MG RESISTOR 33Ω,1/10W
	K6702	NQR0200-003X	FERRATE BEADS
	K6703	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	K6704	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	K6705	NRSA02J-0R0X	MG RESISTOR,A,C,D 0Ω,1/10W
		NRSA02J-100X	MG RESISTOR,B,E 10Ω,1/10W
	K6706	NRSA02J-470X	MG RESISTOR 47Ω,1/10W
	K6707	NQR0200-003X	FERRATE BEADS,B,E
	BK1	LP40425-001A	BRACKET(PWB)
	CN6701	QGG2502K1-10	HEADER PIN

MINI FRONT BOARD ASSEMBL <28> [HR-S7955MS]

PW1	LPA20014-02A	MINI FRONT BOARD ASSY
S7028	QSW0456-002Z	TACT SWITCH
S7029	QSW0456-002Z	TACT SWITCH
CN7002	QGF1208C1-06	FPC CONNECTOR,(1-6)
CN7005	QGF1208C1-04	FPC CONNECTOR,(1-4)

S.JACK BOARD ASSEMBLY <36>

PW1	LPA20009-02B	S JACK BOARD ASSY
J7102	QND0084-001	S JACK
CN7108	QGF1209F1-04	FPC CONNECTOR,(1-4)TERMINAL

ADV.JOG BOARD ASSEMBLY <38>

PW1	LPA20013-05A	ADV.JOG BOARD ASSY
UN7001	QSW0905-001	ROTARY ENCODER
CN7003	QGF1209F1-04	FPC CONNECTOR,(1-4)MAIN

#	△	REF No.	PART No.	PART NAME, DESCRIPTION

LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10158-01A2	LOADING MOTOR BOARD ASSY
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S/P CONVERTER BOARD ASSEMBLY <87> [HR-S6955MS/S7955MS]

PW1	LPA10144-04A	S/P CONVERTER BOARD ASSY
IC1601	BA7046F-XE	IC
IC1602	74HC132D	IC(DIGITAL)
IC1603	74HC4538D	IC
IC1604	74HC74D	IC
IC1605	TDA8395	IC
IC1606	TDA4665T	IC
IC1607	TDA8501T/N1-X	IC
Q1601	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1604	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1605	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1606	2SC1740S/QRS/-T	TRANSISTOR
Q1607	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1608	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1609	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1610	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1611	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1612	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1613	2SC4083/NP/-X	TRANSISTOR
Q1614	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR
Q1615	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1616	2SD1819A/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
Q1617	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
D1601			1SS133	DIODE
R1601			NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R1608			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R1609			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1610			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1611			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
R1612			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R1615			NRSA02J-331X	MG RESISTOR 330Ω,1/10W
R1616			NRSA02J-474X	MG RESISTOR 470kΩ,1/10W
R1617			NRSA02J-474X	MG RESISTOR 470kΩ,1/10W
R1618			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R1619			NRSA02J-134X	MG RESISTOR 130kΩ,1/10W
R1620			NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R1621			QRE141J-103Y	RESISTOR 10kΩ,1/4W
R1622			QRE141J-103Y	RESISTOR 10kΩ,1/4W
R1623			NRSA02J-123X	MG RESISTOR 12kΩ,1/10W
R1624			NRSA02J-124X	MG RESISTOR 120kΩ,1/10W
R1631			NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1632			NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W
R1633			NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
R1635			NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R1636			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1637			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R1638			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R1639			NRSA02J-331X	MG RESISTOR 330Ω,1/10W
R1640			NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R1641			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1642			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R1643			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R1644			NRSA02J-331X	MG RESISTOR 330Ω,1/10W
R1645			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R1646			NRSA02J-104X	MG RESISTOR 100kΩ,1/10W
R1647			NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
R1648			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1651			NRSA02J-123X	MG RESISTOR 12kΩ,1/10W
R1652			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1653			NRSA02J-184X	MG RESISTOR 180kΩ,1/10W
R1654			NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1655			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1656			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R1657			NRSA02J-561X	MG RESISTOR 560Ω,1/10W
R1658			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R1659			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R1660			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R1661			NRSA02J-333X	MG RESISTOR 33kΩ,1/10W
VR1601			QVP0039-471Z	TRIM RESISTOR
VR1602			QVP0039-471Z	TRIM RESISTOR
VR1603			QVP0039-104Z	TRIM RESISTOR
B1601			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
B1602			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
B1603			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
C1601			QEKJ1CM-476	E CAPACITOR 47μF,16V
C1602			NCB21HK-103X	CAPACITOR 0.01μF,50V
C1605			QEKJ1HM-105	E CAPACITOR 1μF,50V
C1606			NCB21HK-102X	CAPACITOR 0.001μF,50V
C1607			NCB21HK-103X	CAPACITOR 0.01μF,50V
C1608			QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C1609			NCB21HK-222X	CAPACITOR 0.0022μF,50V
C1610			QEKJ1HM-105	E CAPACITOR 1μF,50V
C1611			NDC21HJ-101X	CAPACITOR 100pF,50V
C1612			NCB21EK-104X	CAPACITOR 0.1μF,25V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C1613		NCB21EK-104X	CAPACITOR				
C1614		NDC21HJ-471X	CAPACITOR				
C1615		NDC21HJ-561X	CAPACITOR				
C1616		NCB21EK-104X	CAPACITOR				
C1631		QEKJ1CM-476	E CAPACITOR				
C1632		QEKJ1CM-476	E CAPACITOR				
C1633		NCB21HK-103X	CAPACITOR				
C1634		NDC21HJ-101X	CAPACITOR				
C1635		NCB21EK-104X	CAPACITOR				
C1636		NCB21CK-224X	CAPACITOR				
C1637		NCB21HK-103X	CAPACITOR				
C1638		QEKJ0JM-476	E CAPACITOR				
C1639		NCB21HK-103X	CAPACITOR				
C1640		QEKJ0JM-476	E CAPACITOR				
C1641		NCB21HK-103X	CAPACITOR				
C1642		NCB21HK-103X	CAPACITOR				
C1643		NCB21HK-103X	CAPACITOR				
C1644		NCB21HK-103X	CAPACITOR				
C1645		QEKJ1HM-105	E CAPACITOR				
C1646		QEKJ1HM-105	E CAPACITOR				
C1647		NCB21CK-224X	CAPACITOR				
C1648		QEKJ0JM-476	E CAPACITOR				
C1649		NCB21HK-103X	CAPACITOR				
C1650		NCB21CK-224X	CAPACITOR				
C1651		NCB21EK-223X	CAPACITOR				
C1652		NDC21HJ-120X	CAPACITOR				
C1653		NCB21CK-224X	CAPACITOR				
C1654		NCB21HK-103X	CAPACITOR				
C1655		QEKJ0JM-476	E CAPACITOR				
C1656		NCB21HK-103X	CAPACITOR				
L1601		QQL29BJ-100Z	COIL				
L1602		QQL29BJ-100Z	COIL				
L1603		QQL29BJ-100Z	COIL				
L1604		QQL29BJ-100Z	COIL				
X1601		QAX0613-001Z	CRYSTAL RESONATOR				
BK1		LP30950-001A	BRACKET 1				
BK2		LP30951-001A	BRACKET(2)				
FL1601		QQR1187-001	EQUALIZER				
FL1602		QQR1187-001	EQUALIZER				
CN1601		QGF1208F1-11	FPC CONNECTOR,(1-11)TERMINAL				

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The following table lists the differing points between models HR-S6950EU, HR-S6955MS, HR-S7950EU, HR-S7955EK and HR-S7955MS.

ITEM \ MODEL	HR-S6950EU	HR-S6955MS	HR-S7950EU	HR-S7955EK	HR-S7955MS
POWER PLUG	CEE	←	←	3PIN	CEE
DIGITAL SLOW	NOT USED	←	USED	←	NOT USED
RETAKE	NOT USED	←	←	←	USED
ZERO FRAME EDIT	NOT USED	←	←	←	USED
INSERT / AUDIO DUBBING	NOT USED	←	←	←	USED
MESECAM	USED(MANUAL)	USED(PB ONLY)	USED(MANUAL)	NOT USED	USED(PB ONLY)
SECAM	NOT USED	USED	NOT USED	←	USED
TBC	NOT USED	←	USED	←	NOT USED
REAR S OUT(4-pin)	NOT USED	←	USED	←	←
REMOTE PAUSE TERMINAL	NOT USED	←	USED	←	←
BROADCASTING STANDARD	B/G, D/K	L, B/G	B/G, D/K	I	L, B/G
RF OUT	USED	NOT USED	USED	←	NOT USED
VPS	USED	NOT USED	USED	NOT USED	←
OSD LANGUAGE	13 LANGUAGES	FRENCH	13 LANGUAGES	ENGLISH	FRENCH
x1.5 PLAYBACK with AUDIO	NOT USED	←	USED	←	NOT USED

Notes: Mark ← is same as left.

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the  symbol and shaded (■) parts are critical for safety.
Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

5. Use specified insulating materials for hazardous live parts.
Note especially:
1) Insulation Tape 3) Spacers 5) Barrier
2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

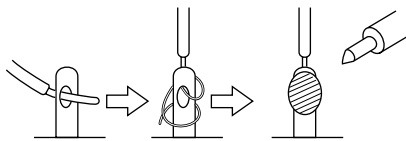


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

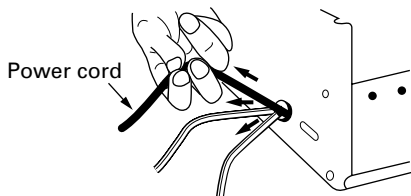


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001

2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.

3) **Replacement procedure**

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

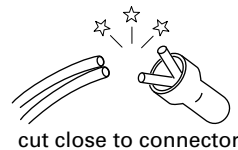


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

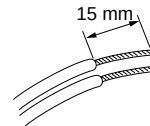


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

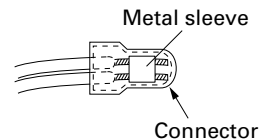


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.



Fig.6

(5) Check the four points noted in Fig.7.

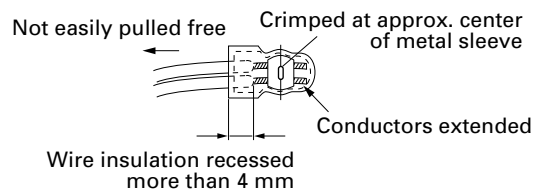


Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

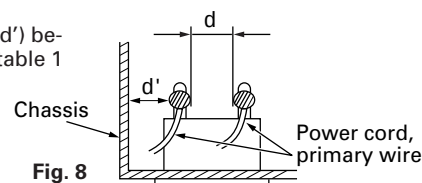


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

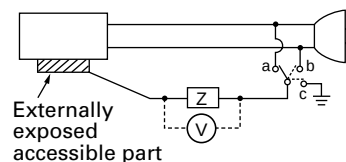


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

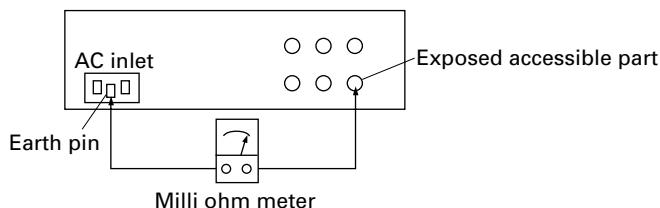


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II)	$d \geq 4 \text{ mm}$
200 to 240 V			AC 1.5 kV 1 minute (Class I)	$d' \geq 8 \text{ mm (Power cord)}$ $d' \geq 6 \text{ mm (Primary wire)}$

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	$1 \text{ k}\Omega$	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	$0.15 \mu\text{F}$ and $1.5 \text{ k}\Omega$	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	Europe & Australia	$2 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
220 to 240 V		$50 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1 DISASSEMBLY

1.1 Manually removing the cassette tape

If you cannot remove the cassette tape which is loaded because of any electrical or mechanical failures, manually remove it by taking the following steps.

- (1) Unplug the power cord plug from the power outlet.
- (2) Refer to the disassembly procedure of the VCR and perform the disassembly of the major parts before removing the mechanism assembly. (See Fig. 1-1a)

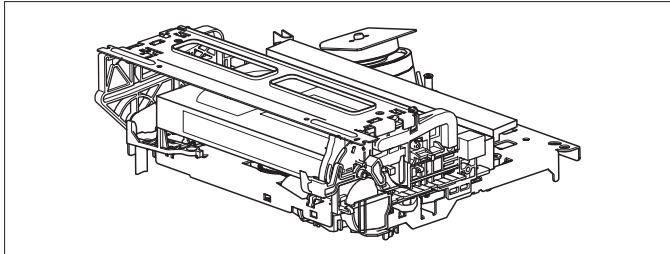


Fig. 1-1a

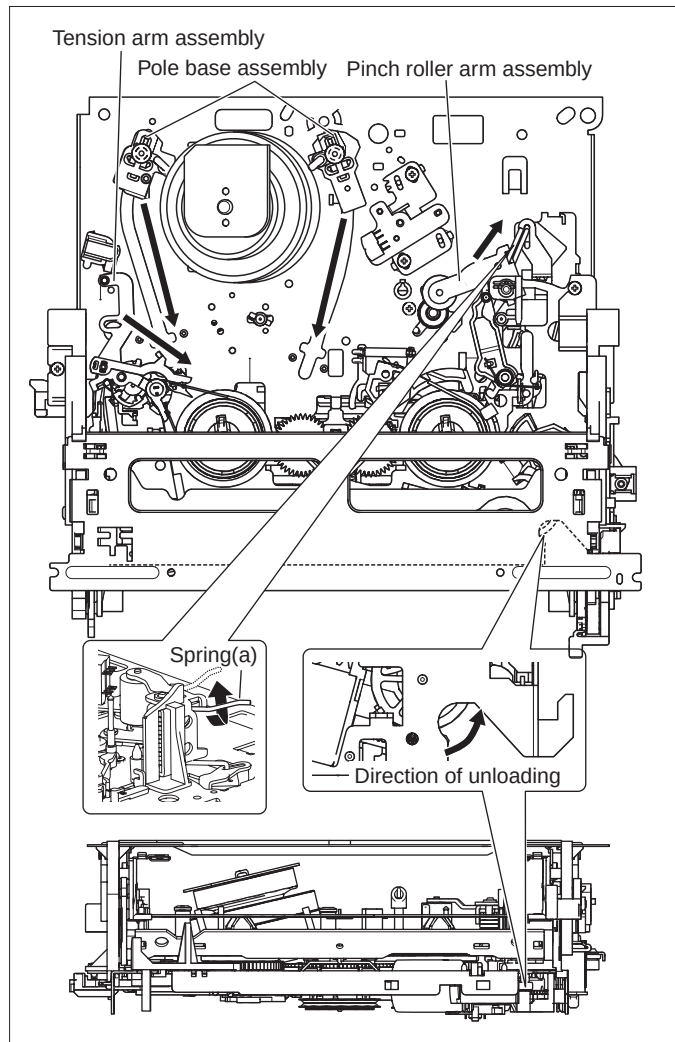


Fig. 1-1b

- (3) Unload the pole base assembly by manually turning the gear of the loading motor until the pole base assembly is hidden behind the cassette lid. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig. 1-1b.) In case of mechanical failures, while keeping the tension arm assembly free from tension, pull out the tape on the pole base assembly. Take the spring(a) of the pinch roller arm assembly off the hook, and detach it from the tape.
- (4) Remove the screw (a) of the side frame (L/R).
- (5) Hold the slack tape and cassette cover together, lift the cassette tape, top frame, cassette holder and side frames (L, R) together from the rear and remove them by disengaging the hooks (a) and (b).

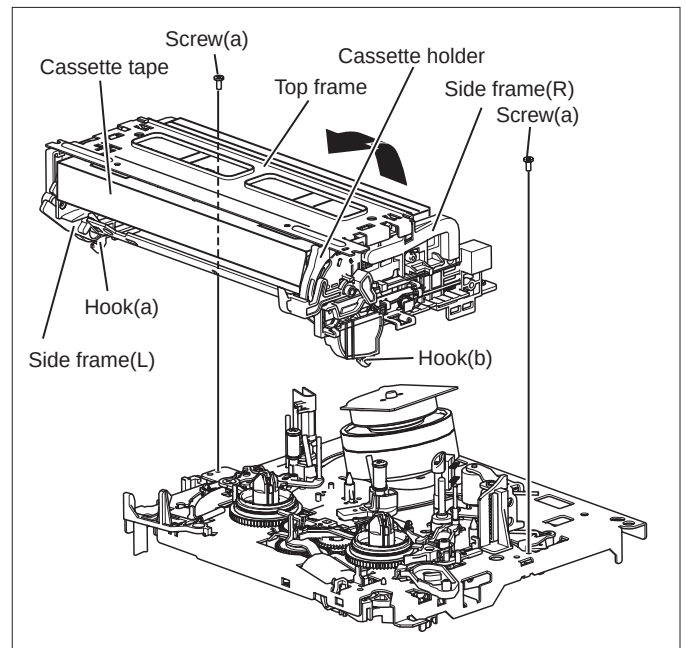


Fig. 1-1c

- (6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

1.2 Removing the major parts

1.2.1 How to read the procedure table

This table shows the steps for disassembly of the externally furnished parts and board assemblies. Reverse these steps when re-assembling them.

<Example>

Step/ LocNo.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	1-3a	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a), 2(S1c)	<Note 1a>
(1)	(2)	(3)	(4)	(5)

(1) Order of steps in Procedure

When reassembling, perform the step(s) in the reverse order.

These numbers are also used as the identification (location) No. of parts Figures.

(2) Part name to be removed or installed.

(3) Fig. No. showing procedure or part location.

(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- The bracketed () WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.

(5) Adjustment information for installation

1.2.2 Disassembly procedure

Step/ LocNo.	Part Name	Fig. No.	Point	Note
[1]	Top cover	1-2-2d	4(S1a), (S1b)	
[2]	Front panel assembly	1-2-2d	[HR-S7955MS] CN7005(WR2a)	<Note 2a> <Note 2b>
			[HR-S6950EU, S6950MS HR-S7950EU, S7955EK] CN7001(WR2a), CN916(WR2b), 2(S2a), 4(L2a), 3(L2b)	
	[HR-S7955MS] Mini front board assembly		CN7001(WR2c) (L2c), (L2d), PC Support	
	(ADV. Jog board assembly)		2(S2b), Knob assembly	
	(Front S jack board assembly)		2(S2c)	
[3]	Mechanism assembly (Drum assembly)	1-2-2d	CN2001(WR3a), (S3a), (S3b)	<Note 2a> <Note 3a>
			CN1(WR3b), (S3c), (S3d), (S3e)	<Note 3b>
	(Inertia plate)		4(L3b)	<Note 3c>
	(Roller arm assembly)		(S3g), (W3a), (P3a), (L3c)	
[4]	[HR-S6955MS, S7955MS] S/P Converter board assembly	1-2-2d	CN511(WR4a) 2(S4a), (L4a)	
[5]	Main board assembly	1-2-2d	(S5a), 3(S5b), (L5a)	
[6]	Bottom cover	1-2-2d	3(L6a), 5(L6b), 2(L6c)	

<Note 2a>

- Be careful not to damage the connector and wire etc. during connection and disconnection.
- When connecting the flat wire to the connector, be careful with the flat wire direction.

<Note 2b>

- When reattaching the Front panel assembly, make sure that the door opener of the Side frame (R) is lowered in position prior to the reinstallation.
- When reattaching the Front panel assembly, pay careful attention to the switch lever of the Front panel assembly not to make it touch the switch knob of the Main board assembly from the side.
- When reattaching the Front panel assembly, lift the Cassette door slightly.

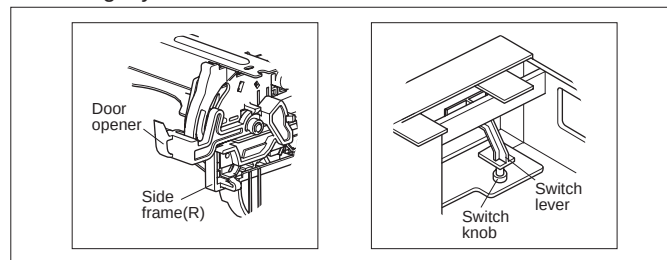


Fig. 1-2-2a

<Note 3a>

- When reattaching the Mechanism assembly, secure the screws (S3a to S3b) in the order of a, b.

<Note 3b>

- When reattaching the Mechanism assembly, be sure to align the phase of the Rotary encoder on the Main board assembly.
- When reattaching the Mechanism assembly, set the "Mechanism assembling mode". (See "section 2 mechanism".)
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.

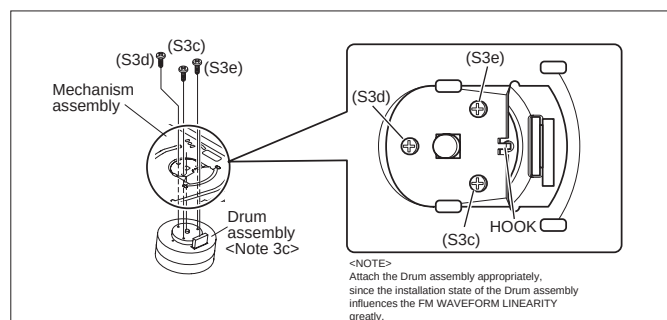


Fig. 1-2-2b

<Note 3c>

- When reattaching the Drum assembly, secure the screws (S3c to S3e) in the order of c, d, e.
- When handling the drum assembly alone, hold it by the motor or shaft. Be careful not to touch other parts, especially the video heads. Also take care not to damage the connectors.

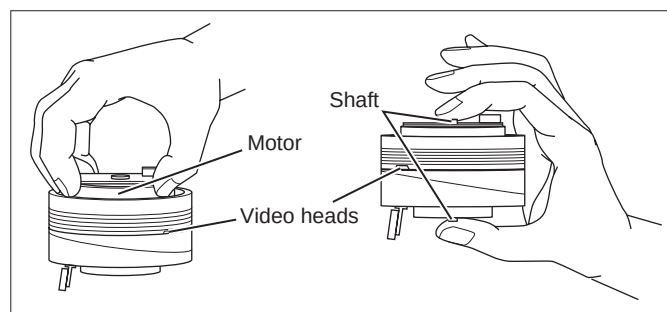


Fig. 1-2-2c

1.3 Emergency display function

This unit saves details of the last two emergencies as the EMG history and allows the status of the VCR and the mechanism of each emergency to be shown both on the display and as OSD information.

When using the emergency function, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).

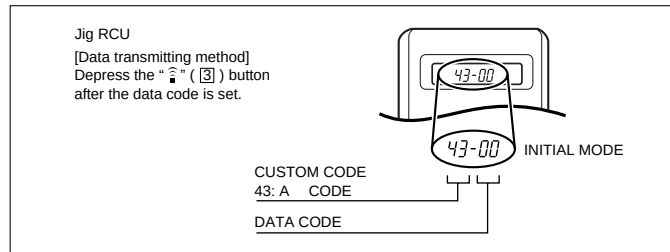


Fig. 1-3a Jig RCU [PTU94023B]

1.3.1 Displaying the EMG information

The EMG detail of information can be displayed by transmitting the code "59" from the Jig RCU.

Note:

- The EMG detail information <1><2> show the information on the latest EMG.
It becomes " - - : - - : - - " when there is no latest EMG record.

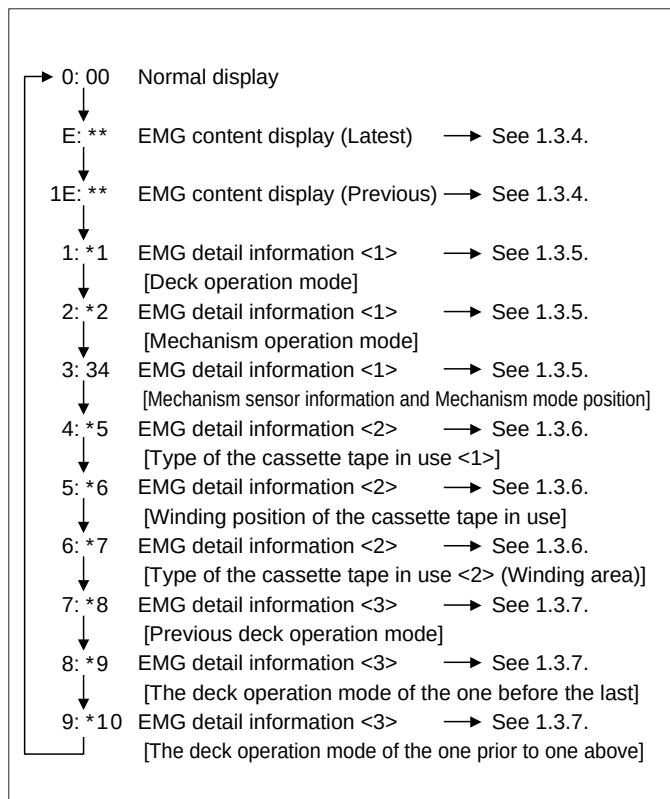


Fig. 1-3-1a EMG display of 7segment LED display model

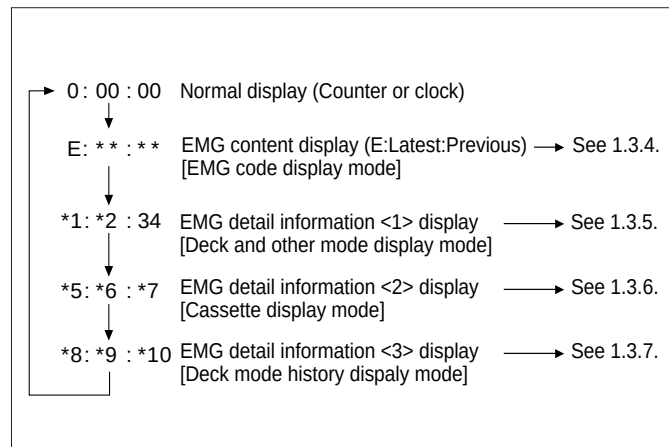
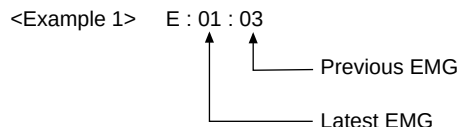


Fig. 1-3-1b EMG display of FDP display model

<Reference> EMG display of FDP display mode

- (1) Transmit the code "59" from the Jig RCU.
The FDP shows the EMG content in the form of "E: ** : **".



- (2) Transmit the code "59" from the Jig RCU again.
The FDP shows the EMG detail information <1> in the form of " *1 : *2 : 34 ".
*1 : Deck operation mode at the moment of EMG
*2 : Mechanism operation mode at the moment of EMG
3- : Mechanism sensor information at the moment of EMG
-4 : Mechanism mode position at the moment of EMG

- (3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <2> in the form of " *5 : *6 : *7 ".
*5 : Type of the cassette tape in use <1> .
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use <2> (Winding area)

- (4) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <3> in the form of " *8 : *9 : *10 ".
*8 : Previous deck operation mode at the moment of EMG
*9 : The deck operation mode of the one before the last at the moment of EMG
*10 : The deck operation mode of the one prior to one above at the moment of EMG

- (5) Transmit the code "59" from the Jig RCU once again to reset the display.

1.3.2 Clearing the EMG history

- (1) Display the EMG history.
- (2) Transmit the code "36" from the Jig RCU.
- (3) Reset the EMG display.

1.3.3 Details of the OSD display in the EMG display mode

During the EMG display, the OSD shows the data on the deck mode, etc. The details of the display contents are as follows.

Notes:

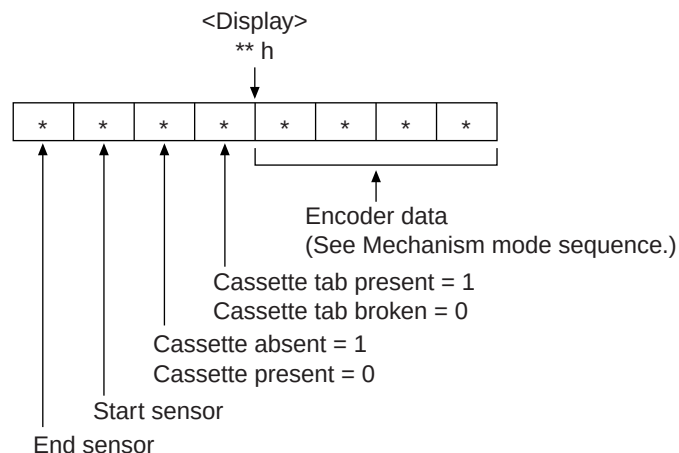
- The display is variable depending on the part No. of the System Control microcomputer (IC3001) built into the VCR. In the following, refer to the figure carrying the same two characters as the top two characters of the part number of your IC.
- The sensor information in the OSD display contents is partially different from the mechanism sensor information in EMG detail information <1>.

[For MN* only]

AA	BB	CC	DD	EE
FF	GG	HH	II	JJ
KK	LL	MM	NN	OO
PP	QQ	RR	SS	TT
UU	VV	WW	XX	YY

AA : Deck operation mode (See EMG detail information <1>.)
BB : Mechanism operation mode (See EMG detail of information <1>.)
CC : Mechanism transition flag
DD : Capstan motor control status
EE : Loading motor control status
FF : Sensor information (See sensor information details.)
GG : Capstan motor speed
HH : Key code (JVC code)
II : Supply reel winding diameter data, higher 8 bits.
JJ : Supply reel winding diameter data, lower 8 bits.
KK : Mechanism sensor information & mechanism mode position
(See EMG detail of information <1>.)
LL : Tape speed data, higher 8 bits.
MM : Tape speed data, lower 8 bits.
NN : Cassette tape type <2>, higher 8 bits.
(See EMG detail of information <2>.)
OO : Cassette tape type <2>, lower 8 bits.
(See EMG detail of information <2>.)
PP : General data display area
YY : General data display area

*FF: Sensor information details

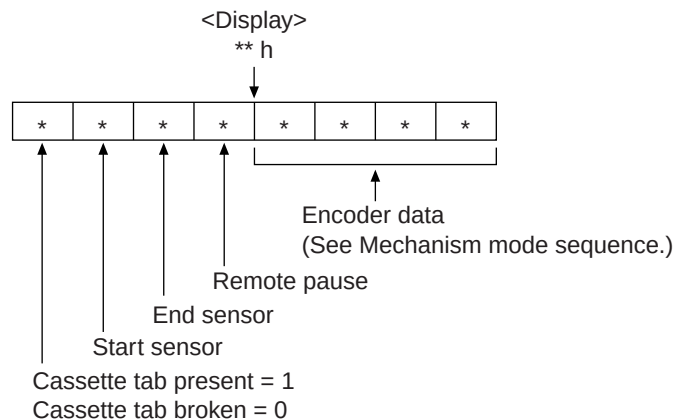


[For *HD only]

AA	BB	CC
DD	EE	FF
GGGG	HHHH	
II	JJJJ	
KKKK	LLLL	MMMM
ROM No.		

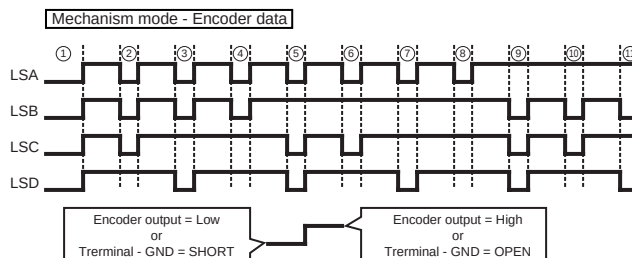
AA : Key code (JVC code)
BB : Deck operation mode (See EMG detail information <1>.)
CC : Mechanism operation mode (See EMG detail information <1>.)
DD : Sensor information (See sensor information details.)
EE : Capstan motor speed (Search, double speed)
FF : Tracking value
GGGG : Cassette tape type <2>, 16 bits.
(See EMG detail information <2>.)
HHHH : Supply reel winding diameter data
II : Capstan motor speed (FF/REW, double speed)
JJJJ : Tape speed data, lower 8 bits.
KKKK : General data display area
LLLL : General data display area
MMMM : General data display area

*DD: Sensor information details

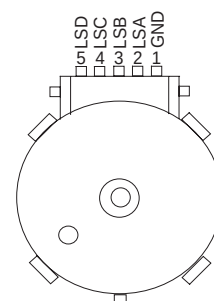


[For both MN*/HD*]

Mechanism mode sequence



No.	Position	Encoder data
①	EJECT	0 h = 0000
②	EJECT1	1 h = 0001
③	EJECT2	2 h = 0010
④	ULSTOP	3 h = 0011
⑤	UPPER	4 h = 0100
⑥	ONSTOP(PLAY)	5 h = 0101
⑦	FWD/SS	6 h = 0110
⑧	REV/SS	7 h = 0111
⑨	OFFSTOP	8 h = 1000
⑩	FFREW-BRAKE	9 h = 1001
⑪	FFREW	A h = 1010
⑫	MIDDLE	F h = 1111



1.3.4 EMG content description

Note: EMG contents “E08/E09” are for the model with Dynamic Drum (DD).

FDP	CONTENT	CAUSE
E01: Loading EMG	If the mechanism mode does not change to the next mode within 4 seconds after the loading motor starts rotating in the loading direction, while the mechanism is in the after-loading position (with the tape up against the pole base), [E:01] is identified and the power is switched OFF. However, if the tape loading is not completed within 4 seconds after the loading motor starts rotating in the loading direction, the tape is simply unloaded and ejected. No EMG data is recorded in this case.	1. The mechanism is locked in the middle of the mode transition during a tape loading operation. 2. The mechanism overruns during the tape loading operation because the SYSCON cannot recognize the mechanism mode normally. This problem is due to a cause such as a rotary encoder failure. 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. Without an eject signal being sent from the SYSCON, unloading is attempted (i.e. Ejection is attempted while the tape is still inside the mechanism.) because the SYSCON cannot recognize the mechanism mode normally. This is due to a cause such as a rotary encoder failure. (Mechanism position: UPPER) 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E03: Take Up Reel Pulse EMG	When the falling edge of the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. In this case, however, the mechanism should be in position after tape loading. Note that the reel EMG is not detected during Slow/Frame advance operations.	1. The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1) The idler gear is not meshed with the take-up reel gear because the mechanism malfunctions for some reason. 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The reel is rotating normally but an FG pulse is not generated due to the take-up reel sensor failure. 2. The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear because the mechanism malfunctions for some reason. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The reel rotates normally but the FG pulse is not generated due to a supply reel sensor failure. 3. Power(SW5V) is not supplied to the reel sensor on the tape winding side.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	1. The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. 2. The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. 3. The drum control voltage (DRUM CTL V) is not supplied to the MDA. 4. Power (M12V) is not supplied to the drum MDA.
E05: Cassette Eject EMG	If the cassette does not reach the eject position within about 0.7 seconds after the cassette housing has started the cassette ejection operation, [E:05] is identified, the drive direction is reversed to load the tape, the mode is switched to STOP mode with the pinch roller OFF, and the power is switched OFF. During the cassette insertion process, the drive direction is reversed and the cassette is ejected if the tape is not up against the pole base within about 3 seconds after the start of the cassette pulling-in operation. If the cassette does not reach the eject position within about 0.7 seconds after the drive mode reversal operation, [E:05] is identified and the power is switched OFF immediately.	1. The cassette cannot be ejected due to a failure in the drive mechanism of the housing. 2. When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. - Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. 3. The sensor/switch for detecting the end of ejection are not functioning normally. 4. The loading motor drive voltage is lower than specified or power (M12V) is not supplied to the motor (MDA). 5. When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the capstan EMG is not detected in SLOW/STILL modes. Note that, if the part number of the System Control IC begins with "MN" or "M3", the capstan EMG is not detected even during the FF/REW operation.	1. The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). 2. The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. 3. The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. 4. Power (M12V, SW5V) are not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	1. The SW 5 V power supply circuit is shorted with GND. 2. The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	1. The absolute value sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. 4. The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	1. The FG sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. 4. The power (5V) to the sensor is not supplied. (Connection failure/soldering failure) 5. The FG pulse is not sent to the System Controller CPU. 6. The tilt motor is defective. (The soldered parts have separated.) 7. The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) 8. The tilt motor drive MDA - IC is defective. 9. Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the falling edge of the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). In this case, however, the mechanism should be in the position after tape loading (with the tape up against the pole base). Also note that the reel EMG is not detected during Slow/Frame advance operations.	1. The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The reel is rotating normally but the FG pulse is not generated due to a supply reel sensor failure. 2. The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The reel is rotating normally but the FG pulse is not generated due to a take-up reel sensor failure. 3. The power (SW 5V) to a reel sensor is not supplied.
EU1: Head clog warning history	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:U1] is identified and recorded in the emergency history. During the period in which the head clog is detected, the FDP shows "U:01" and the OSD repeats the "3 seconds of warning display" and the "7 seconds of noise picture display" alternately. EMG code : "E:C1" or "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." or "Use cleaning cassette." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

1.3.5 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display]

*1 : *2 : 34

- *1 : Deck operation mode at the moment of EMG
- *2 : Mechanism operation mode at the moment of EMG
- 3— : Mechanism sensor information at the moment of EMG
- 4 : Mechanism mode position at the moment of EMG

Note:

- **For EMG detailed information <1>, the content of the code that is shown on the display (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.**

*1 : Deck operation mode

[Common table of MN* and HD]

Display		Deck operation mode
MN*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY (Normal playback)
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

*2 : Mechanism operation mode

[Table of MN*]

Display	Mechanism operation mode
00	Command standby (No command to be executed)
01	Immediate Power OFF after EMG occurrence
02	Loading from an intermediate position during mechanism initialization
03	Unloading due to EMG occurrence during mechanism initialization
04	Ejecting cassette (ULSTOP to EJECT)
05	Inserting cassette (EJECT to ULSTOP)
06	Loading tape (ULSTOP to PLAY)
07	Unloading tape (PLAY to ULSTOP)
08	Transition from pinch roller ON to STOP
09	Transition from pinch roller OFF to STOP (PLAY to OFFSTOP)
0A	Transition from pinch roller OFF to STOP at power OFF
0B	Transition from pinch roller ON to STOP at power ON
0C	Transition to PLAY
0D	Transition to Search FF
0E	Transition to REC
0F	Transition to FWD STILL/SLOW
10	Transition to REV STILL/SLOW
11	Transition to Search REV
12	Transition from FF/REW to STOP
13	Transition to FF
14	Transition to REW
15	Tape end detection processing during loading
16	Short FWD/REV at tape sensor ON during unloading
17	Transition to FF/REW brake mode

[Table of HD*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY (Normal playback)
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)
FF	Tape being unloaded

3- : Mechanism sensor information

[Common table of MN* and HD*]

Display	Mechanism sensor information			
	REC safety SW	Start sensor	End sensor	Mechanism position sensor
0-	Tab broken	ON	ON	ON
1-	Tab broken	ON	ON	OFF
2-	Tab broken	ON	OFF	ON
3-	Tab broken	ON	OFF	OFF
4-	Tab present	OFF	ON	ON
5-	Tab present	OFF	ON	OFF
6-	Tab present	OFF	OFF	ON
7-	Tab present	OFF	OFF	OFF
8-	Tab broken	ON	ON	ON
9-	Tab broken	ON	ON	OFF
A-	Tab broken	ON	OFF	ON
B-	Tab broken	ON	OFF	OFF
C-	Tab present	OFF	ON	ON
D-	Tab present	OFF	ON	OFF
E-	Tab present	OFF	OFF	ON
F-	Tab present	OFF	OFF	OFF

Tab broken = 0

Tab present = 1

Sensor ON = 0

sensor OFF = 1

Sensor ON = 0

Sensor OFF = 1

-4 : Mechanism mode position

[Common table of MN* and HD*]

Mechanism sensor information	Display	Deck operation mode	
Even number (0, 2, 4, 6, 8, A, C, E)	-0	Not established	
	-1	EJECT	EJECT position
	-2	EJECT-EJECT1	Intermodal position
	-3	EJECT1	EJECT1 position
	-4	EJECT1-EJECT2	Intermodal position
	-5	EJECT2	EJECT2 position
	-6	EJECT2-ULSTOP	Intermodal position
	-7	ULSTOP	ULSTOP position
	-8	ULSTOP-UPPER	Intermodal position
	-9	UPPER	Loading (unloading) tape
	-A	UPPER-ONSTOP	Intermodal position
	-B	ONSTOP	PLAY position
	-C	PLAY-FWD/SS	Intermodal position
	-D	FWD/SS	FWD (FWD Still/Slow) position
	-E	FWD/SS-REV	Intermodal position
	-F	REV	REV (REV Still/Slow) position
Odd number (1, 3, 5, 7, 9, B, D, F)	-0	REV-OFFSTOP	Intermodal position
	-1	OFFSTOP	Pinch roller OFF position
	-2	OFFSTOP-FFREWB	Intermodal position
	-3	FFREWB	FF/REW Brake position
	-4	FFREWB-FFREW	Intermodal position
	-5	FFREW	FF/REW position

1.3.6 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

[FDPI/OSD display]

*5 : *6 : *7

*5 : Type of the cassette tape in use <1>

*6 : Winding position of the cassette tape in use

*7 : Type of the cassette tape in use <2> (Winding area)

Note:

- **EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.**

*5 : Cassette tape type <1>

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- **Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.**
- **If other value than those listed in the above table is displayed, the cassette tape type is not identified.**

*6 : Cassette tape winding position

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 21 sections using a hex number from "00" to "14".

"00" : End of winding

"14" : Beginning of winding

"FF" : Tape position not identified

*7 : Cassette tape type <2> (Winding area)

Display	Cassette tape type <2>	(Reference) Word data (Beginning) (End)
00	Cassette type not identified	
04 - 08	C cassette, thick tape TC-10	(0497 - 0506) (0732 - 0858)
05 - 06	Small reel, thick tape T-20	(05A9 - 0661)
05 - 0C	C cassette, thick tape TC-20P	(0599 - 05FF) (0AA1 - 0C07)
06 - 0C	C cassette, thin tape TC-40	(0623 - 063D) (0C41 - 0CC3)
06 - 0C	C cassette, thin tape TC-30	(0611 - 0638) (0C0C - 0CB2)
07 - 08	Small reel, thick tape T-40	(07CC - 08E5)
09 - 0B	Small reel, thick tape T-60	(09FD - 0B78)
0C - 0D	Small reel, thick tape T-80(DF-160)	(0C20 - 0DFC)
0D - 0F	Small reel, thick tape T-90(DF-180)	(0D31 - 0F3E)
0E - 10	Small reel, thick tape T-100	(0E43 - 107F)
10 - 12	Small reel, thin tape T-140	(10E1 - 120C)
10 - 13	Small reel, thick tape T-120(DF-240)	(1073 - 1313)
11 - 14	Small reel, thick tape T-130	(1185 - 1429)
12 - 14	Small reel, thin tape T-160	(12D3 - 141F)
13 - 14	Small reel, thin tape T-210(DF-420)	(1373 - 14C3)
13 - 14	Small reel, thin tape T-180(DF-360)	(1357 - 14C0)
13 - 14	Small reel, thin tape T-168	(1395 - 14EE)
13 - 14	Small reel, thick tape DF-300	(13A8 - 14CE)
15 - 16	Large reel T-20	(1536 - 1618)
16 - 17	Large reel T-30	(1647 - 175A)
17 - 18	Large reel T-40	(1759 - 189C)
19 - 1B	Large reel T-60	(1989 - 1B2F)

Note:

- **The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.**

1.3.7 EMG detail information <3>

Three deck operation modes preceding the deck operation mode in which the EMG occurs may be confirmed based on the figures in the EMG information detail <3>. For the contents of the displayed information, see the table "Deck operation mode" in section "1.3.5 EMG detail information <1>".

1.4 Service position

This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the chassis assembly. Before diagnosing or servicing the circuit boards, take out the major parts from the chassis assembly.

1.4.1 How to set the "Service position"

- (1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Mechanism assembly.
- (2) Remove the screws that fix the Mechanism assembly to the Chassis assembly. If any other screws are used to fix the boards, remove them also.
- (3) Remove the combined Mechanism and Main board assemblies.
- (4) If any other major parts are used, remove them also.
- (5) Connect the wires and connectors of the major parts that have been removed in steps (1) to (4). (Refer to Fig. 1-2-2d.)
- (6) Place the combined Mechanism, Main board and other board assemblies upside down.
- (7) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

Notes:

- **Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.**
- **For the disassembly procedure of the major parts and details of the precautions to be taken, see "1.2 Removing the major parts".**
- **If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).**
- **When carrying out diagnosis and repair of the Main board assembly in the "Service position", be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.**
- **In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.**
- **For some models, the mechanism and board assemblies are attached by connectors only. When carrying out a diagnosis or repair of the boards in the "Service position", make sure that the connectors are not disconnected.**

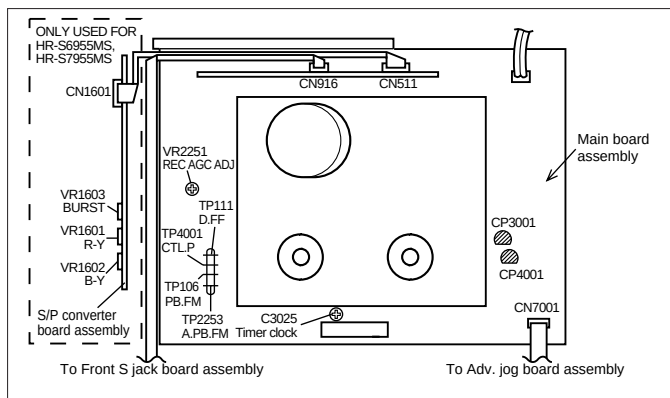


Fig. 1-4-1a

1.5 Jig RCU mode

This unit uses the following two modes for receiving remote control codes.

- 1) User RCU mode : Ordinary mode for use by the user.
- 2) Jig RCU mode : Mode for use in production and servicing.

When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). As both of the above two modes are stored in the EEPROM, it is required to set the VCR back to the User RCU mode each time that an adjustment is made or to check that the necessary operations have been completed. These modes can be set by the operations described below.

1.5.1 Setting the Jig RCU mode

- (1) Unplug the power cord plug from the power outlet.
- (2) Press and hold the "REC" and "PAUSE" buttons on the VCR simultaneously, while plugging the power cord plug into the power outlet.
When the VCR is set to the Jig RCU mode, the symbols (" : ") in the time display of the FDP are turned off.

1.5.2 Setting the User RCU mode

- (1) Turn off the power.
- (2) Press the "REC" and "PAUSE" buttons of the VCR simultaneously. Alternatively, transmit the code "80" from the Jig RCU.

1.6 Mechanism service mode

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "Mechanism service mode".

1.6.1 How to set the "Mechanism service mode"

- (1) Set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).
- (2) Transmit the code "E5" from the Jig RCU.
- (3) Release the lug of the Cassette holder and then slide the Cassette holder toward the direction where the Cassette holder is loaded by manually.
- (4) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.
When the VCR is set to the Mechanism service mode, the symbols ("Timer") in the FDP (LED) are blinked.

1.6.2 How to exit from the "Mechanism service mode"

- (1) Unplug the power cord plug from the power outlet.

1.7 Maintenance and inspection

1.7.1 Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

Note:

- **Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.**

- (1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.
- (2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
- (3) After cleaning, make sure that the cleaned parts are completely dry before using the cassette tape.

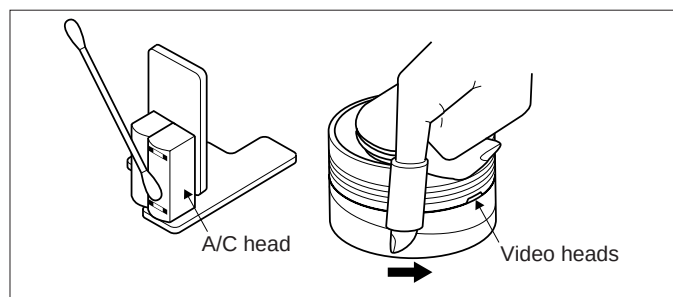


Fig. 1-7-1a

1.7.2 Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- **See the “mechanism assembly” diagram of the “parts list” for the lubricating or greasing spots, and for the types of oil or grease to be used.**

1.7.3 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts name	Operation hours	
		1000H	2000H
Tape transport	Drum assembly	C,X	X
	A/C head	C,X	C,X
	Pinch roller arm assembly	C	C
	Full erase head	C	C
	Tension arm assembly	C	C
	Capstan motor (Shaft)	C	C
	Guide arm assembly	C	C
Drive	Capstan motor		X
	Capstan brake assembly		X
	Main brake assembly		X
	Belt (Capstan)	X	X
	Loading motor		X
	Clutch unit		X
	Worm gear		X
	Control plate		X
Other	Rotary encoder		X

C : Cleaning

X : Inspection or Replacement if necessary

1.8 Servicing items related to video navigation

The video navigation function built into this unit works by storing the video navigation data in the internal EEPROM and writing data in the cassette tape simultaneously.

The video navigation data stored in the EEPROM cannot be copied to another EEPROM. Therefore, when the circuit board mounting the EEPROM is replaced, the original EEPROM should be mounted on the new board. This will make the user's video navigation data usable with the new circuit board after replacement. However, the user's data cannot be restored if the EEPROM on the original circuit board is damaged.

Note:

- **If the circuit board mounting the EEPROM or the EEPROM alone has been replaced, it is required to perform confirmation/re-adjustment on all of the adjustment items using the EVR as well as those which are adjusted by transmitting adjustment codes from the Jig RCU.**

SECTION 2 MECHANISM

2.1 Before disassembling

2.1.1 Notes

This model's mechanism relates closely to the rotary encoder and system control circuit (the rotary encoder is meshed with the control cam).

The system control circuit detects the mechanism condition using the rotary encoder's phase (internal switch phase). Therefore, the parts such as the rotary encoder, control plate, loading gear and control cam need to be installed correctly in order for the mechanism to operate properly. (For the mechanism phase adjustment, refer to the installation of each part.)

- For the disassembly procedure of the major parts of the main unit and notes, refer to the "section 1 disassembly".
- Before using a soldering iron, be sure to disconnect the power plug from the AC outlet.
- Do not touch any of the adjustment points until a defect position is specified.
- When plugging or unplugging the connector, be sure not to damage the wire.
- Be sure the springs are hooked all the way around and in the correct direction.
- When performing repairs, take care not to damage a catch, etc.

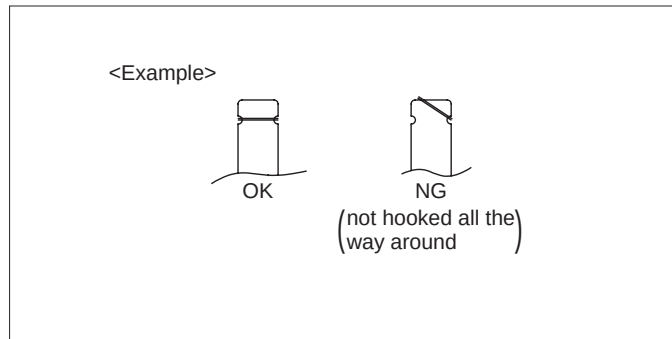


Fig. 2-1-1a

2.1.2 Mechanism operation check

When the mechanism is operated without a cassette loaded, operate the mechanism in the mechanism service mode. (Refer to the "section 1 disassembly".)

2.1.3 Setting the mechanism assembling mode

The mechanism-assembling mode is provided with this mechanism. When disassembling and assembling, it is required to engage this mode.

Set the mode by adopting the following procedures.

- (1) Remove the mechanism assembly using the disassembling procedure.
- (2) Turn gear (a) of the loading motor manually to set the mechanism assembly to the eject end mode. Make sure that the main deck is connected to the guide hole (a) of the drive lever and the seal (a) of the main deck is connected to the mark "E" of the control plate. This condition is called the mechanism-assembling mode.

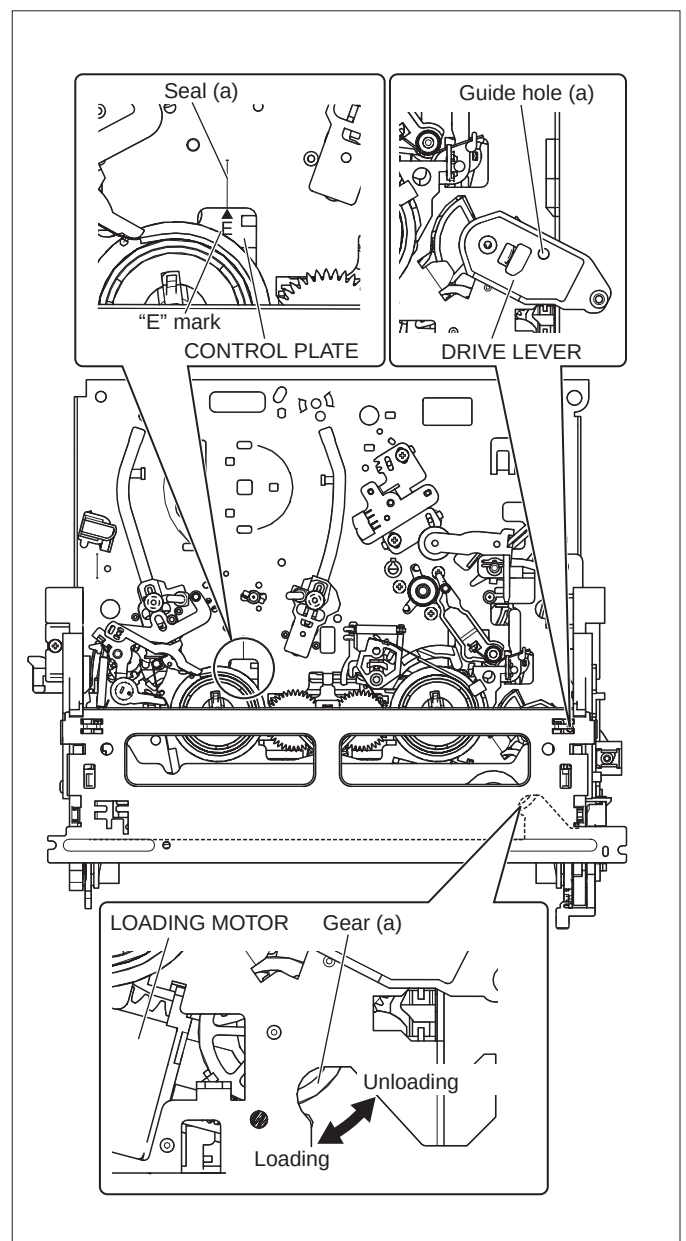


Fig. 2-1-3a

2.1.4 Layout of the main mechanism parts

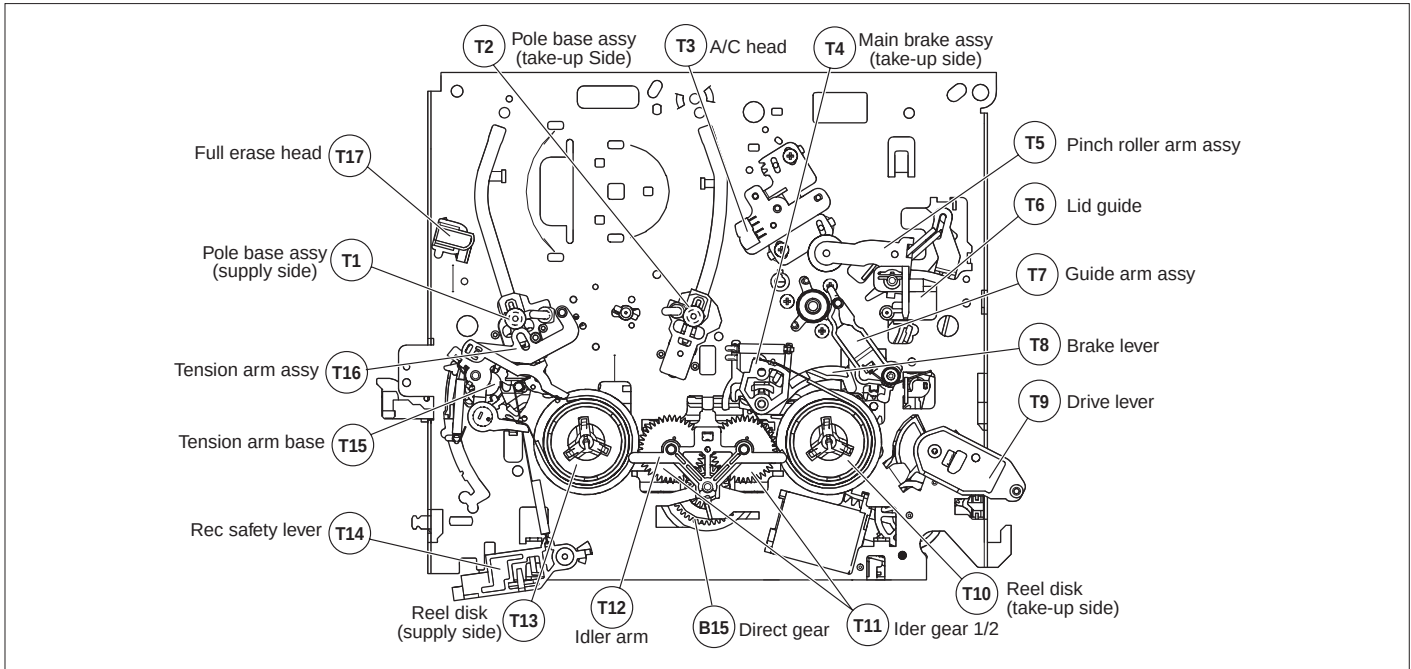


Fig. 2-1-4a

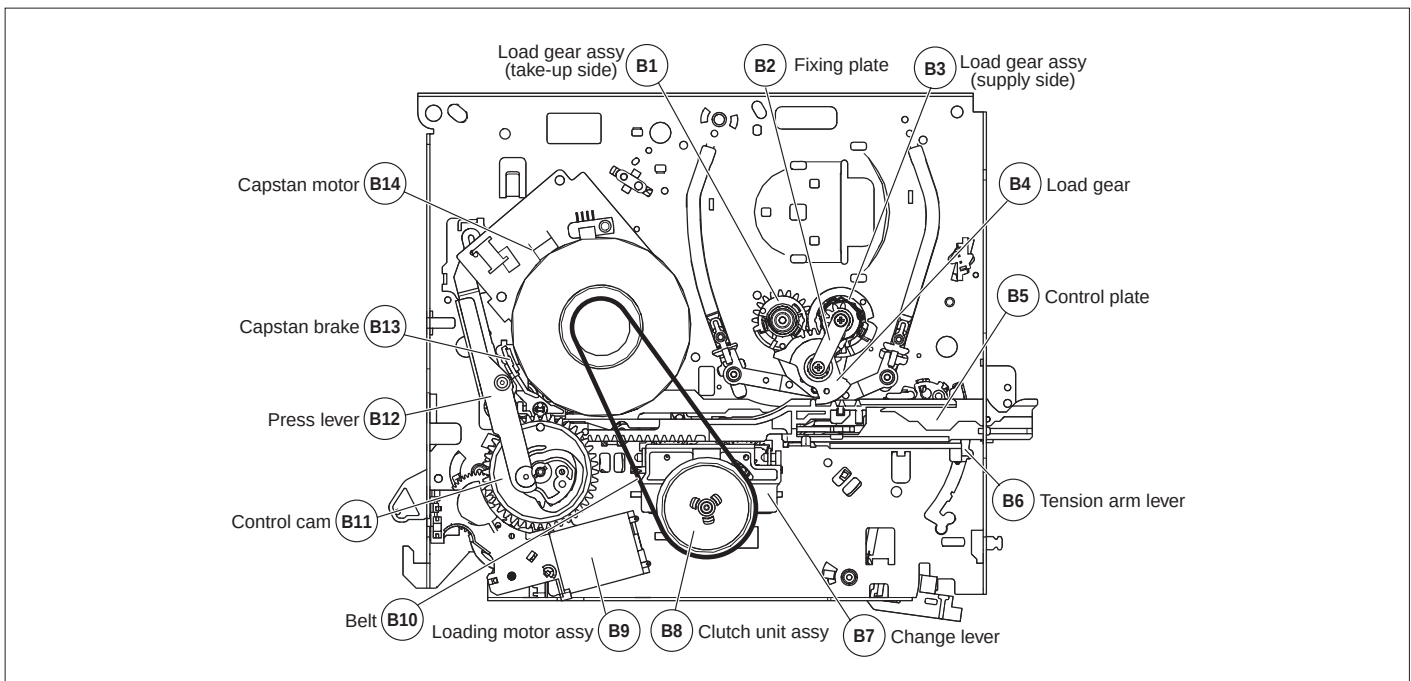


Fig. 2-1-4b

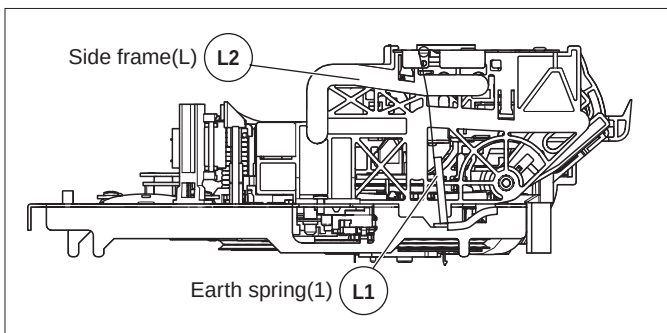


Fig. 2-1-4c

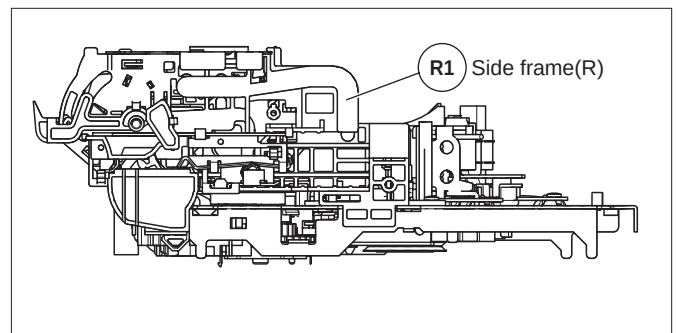


Fig. 2-1-4d

2.1.5 Disassembling procedure table

This table shows the order of parts removal when replacing each part. For replacement, remove the parts in the order of 1 to 13 shown in the table and install the parts in the reverse order.

The symbol number before each part name shows the number in the figure "Layout of the main mechanism parts". T and B on the right of each part name show the side from which the part should be removed (T: From the front of the mechanism, B: From the rear of the mechanism, T/B: From both sides).

Symbols and numbers				L1	-	-	L2	-	R1	T6	T12	T11	T4	T10	T16	T15	B12	B11	B13	B9	B10	B2	B4	B3	B1	B5	B8	B15
Symbols and numbers	Removal parts	Front(T)/Back(B) of mechanism	Number of removal steps	Earth spring (1)	Top frame	Cassette holder	Side frame (L)	Drive arm	Side frame (R)	Lid guide	Idler arm	Idler gear 1/2	Main brake (T)	Reel disk (T)	Tension arm	Tension arm base	Press lever	Control cam	Capstan brake assy	Loading motor assy	Belt	Fixing plate	Load gear	Loading gear assy (S)	Loading gear assy (T)	Control plate	Clutch unit	Direct gear
	(Reference items) Replacement parts																											
L1	2.1 Earth spring (1)	T	1																									
-	2.1 Top frame	T	2	1																								
-	2.1 Cassette holder	T	3	1	2																							
L2	2.1 Side frame (L)	T	3	1	2																							
-	2.1 Drive arm	T	5	1	2	3	4																					
R1	2.1 Side frame (R)	T	3	1	2																							
T3	2.2 A/C head	T	1																									
T17	- FE head	T/B	1																									
T7	2.3 Guide arm assy	T	1																									
T6	2.3 Lid guide	T	1																									
T5	2.3 Pinch roller arm assy	T	2							1																		
T12	2.4 Idler arm	T	4	1	2	3																						
T11	2.4 Idler gear 1/2	T	5	1	2	3					4																	
T4	2.5 Main brake assy (T)	T	6	1	2	3					4	5																
T10	2.5 Reel disk (T)	T	7	1	2	3					4	5	6															
T16	2.5 Tension arm	T	6	1	2	3					4	5																
T13	2.5 Reel disk (S)	T	7	1	2	3					4	5		6														
T15	2.5 Tension arm base	T	7	1	2	3					4	5		6														
-	- T-up head	T	8	1	2	3					4	5		6	7													
-	- T-up lever	T	8	1	2	3					4	5		6	7													
T8	2.5 Brake lever	T	8	1	2	3					4	5	6	7														
T14	2.5 Rec safety lever	T	7	1	2	3	4	5	6																			
B12	2.6 Press lever	B	1																									
B11	2.6 Control cam	B	2														1											
B13	2.6 Capstan brake assy	B	3														1	2										
B9	2.6 Loading motor assy	B	4														1	2	3									
B10	2.7 Belt	B	1																									
B14	2.7 Capstan motor	T/B	2																		1							
-	- Wire holder	T/B	1																									
B2	2.7 Fixing plate	B	1																									
B4	2.7 Load gear	B	2																			1						
B3	2.7 Loading gear assy(S)	B	3																			1	2					
B1	2.7 Loading gear assy(T)	B	4																			1	2	3				
T1	- Pole base assy(S)	T/B	4																			1	2	3				
T2	- Pole base assy(T)	T/B	5																			1	2	3	4			
-	- Load gear base	B	5																			1	2	3	4			
B5	2.7 Control plate	B	6														1	2			3	4	5					
T9	- Drive lever	T/B	10	1	2	3	4	5	6								7	8		9								
B8	2.8 Clutch unit	B	2																		1							
B15	2.8 Direct gear	B	3																		1						2	
B7	- Change lever	T/B	6								1	2									3						4	
B6	- Tension arm lever	T/B	14	1	2	3					4	5		6	7	8	9				10	11	12			13		

2.2 Replacement of the main mechanism parts

2.2.1 Cassette holder

2.2.1.1 Removal

- (1) Remove the screws (a) and (b).
- (2) Hold up the top frame, cassette holder assembly, drive arm assembly and side frames (L/R) all together and remove them by releasing the hooks (a) and (b).

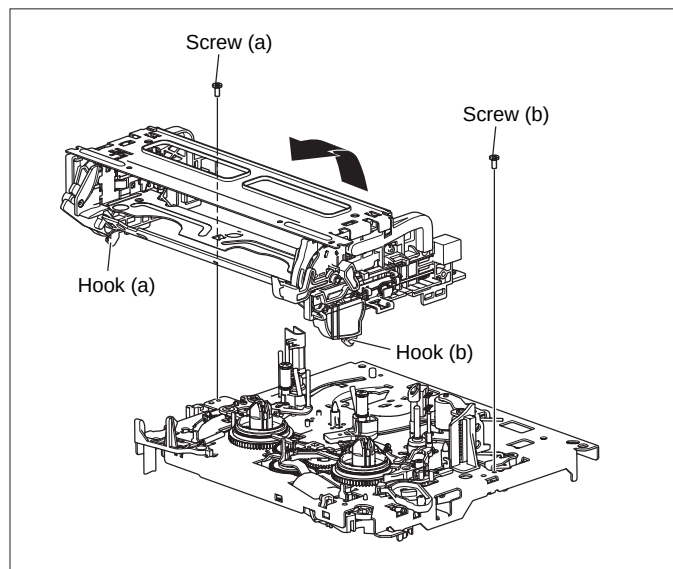


Fig. 2-2-1a

2.2.1.2 Installation (phase adjustment)

- (1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
- (2) Hook the main deck to hooks (a) and (b).
- (3) Place the projection of the drive lever to section (a) of the side frame (R) and install the cassette holder to the main deck. Make sure that the bosses of the side frame (L/R) connect with the holes (a) and (b) of the main deck.
- (4) Secure screws (a) and (b).

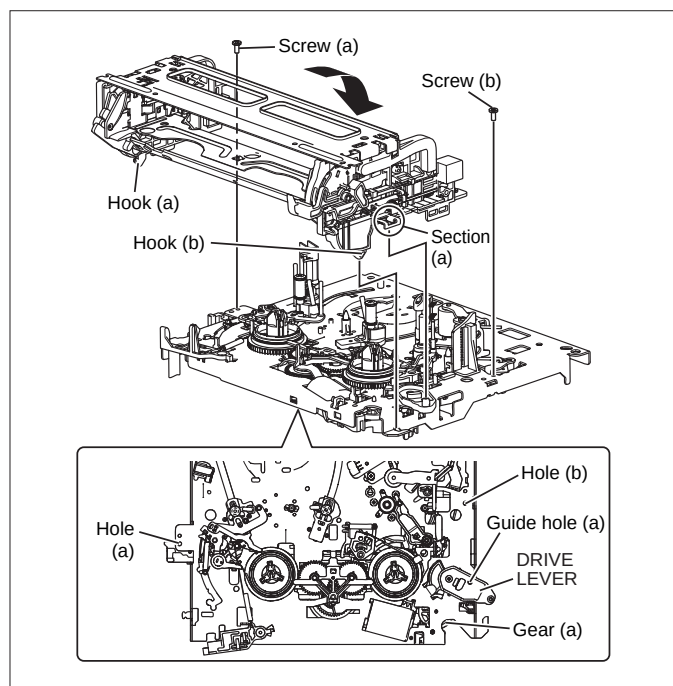


Fig. 2-2-1b

2.2.1.3 Disassembling

- (1) Release hook (a) to remove the earth spring (1) from the top frame.
- (2) Release the catches (a) and (b) and pull the top frame in the direction shown by the arrow (a) to remove it.
- (3) Pull out the side frame (R).
- (4) Pull out the cassette holder assembly and drive arm assembly from the side frame (L).

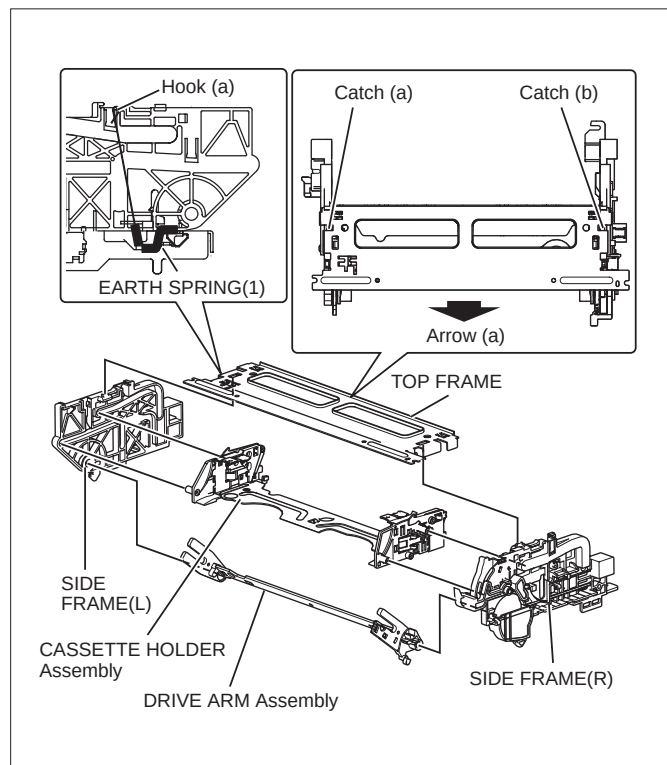


Fig. 2-2-1c

2.2.1.4 Assembling (installation and phase adjustment)

- (1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
- (2) Place the projection of the drive lever on section (a) of the side frame (R) and install the side frame (R) to the main deck.
- (3) Secure screw (b).
- (4) Place section (b) of the drive arm on the gear of the side frame (R). Make sure that the pin of the door opener connects with section (c) of the drive arm.
- (5) Place the drive arm on section (d) of the side frame (L) and install the side frame (L) on the main deck. Be sure to connect the earth spring (1) to the side frame (L).
- (6) Secure screw (a).
- (7) Turn gear (a) of the loading motor assembly until the drive arm is vertical.
- (8) Place the slit of the side frame (L/R) at the foot of the cassette holder assembly and install the cassette holder.
- (9) Place the top frame on the position guide (a) of the side frame (L/R) and push it in the direction shown by the arrow (a) for installation.
- (10) Hook the earth spring (1) to the hook (a) of the top frame.

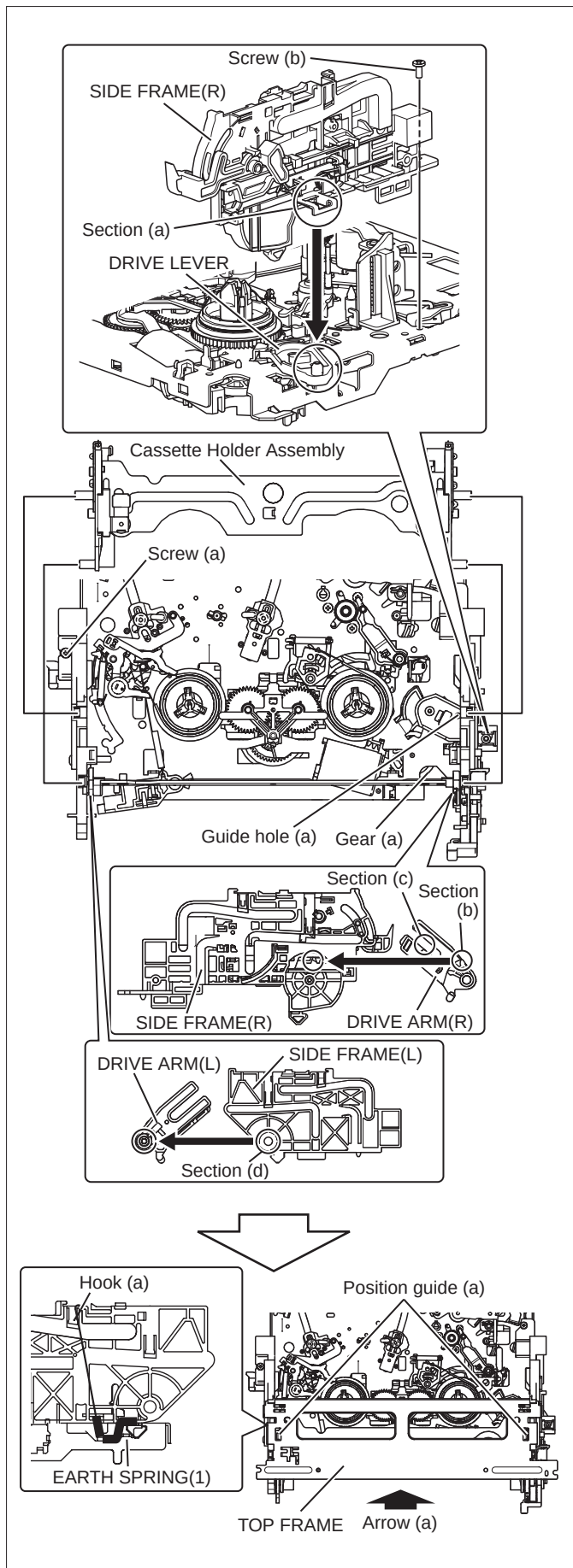


Fig. 2-2-1d

2.2.2 A/C head

2.2.2.1 Removal

- (1) Remove screws (a) and (b).
- (2) Remove the A/C head together with the head base.
- (3) Remove the screws (c), (d) and (e) to remove the spring (a) and the A/C head from the Head base.

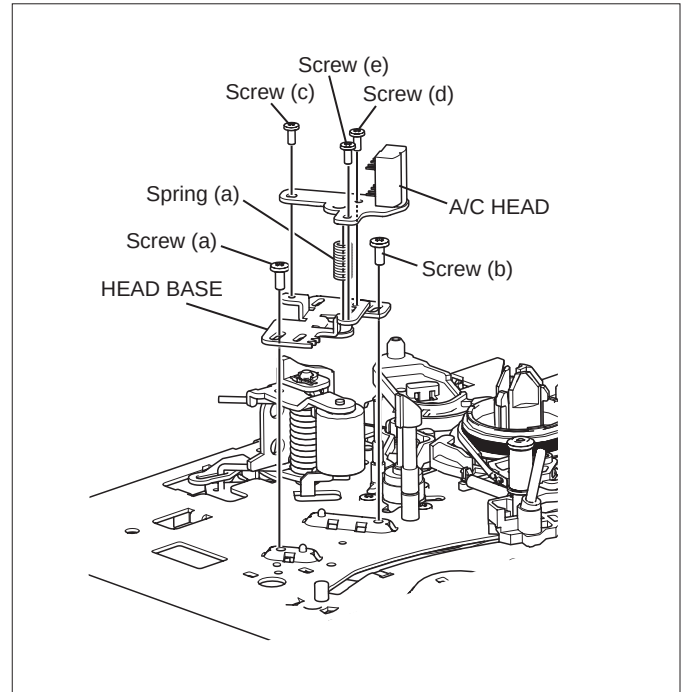


Fig. 2-2-2a

2.2.2.2 Installation (initial setting)

To install the A/C head to the head base, secure the screws in the order of (c), (d) and (e). To make the adjustment easy, temporarily elevate the A/C head.

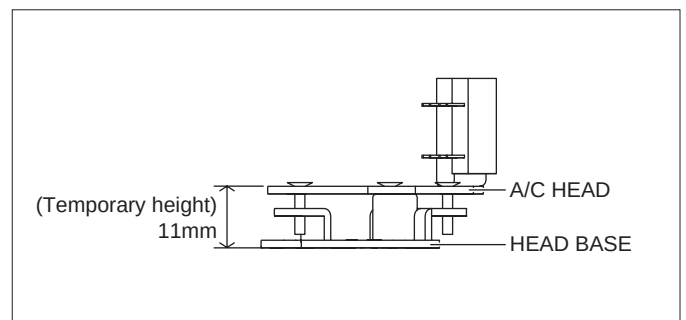


Fig. 2-2-2b

2.2.3 Guide arm, pinch roller arm

2.2.3.1 Removal

- (1) Remove the spring (a) from the hook (a) and detach the guide arm assembly.
- (2) Release the catch (a) to remove the lid guide.
- (3) Remove the spring (b) from the hook (b) and detach the pinch roller arm assembly.

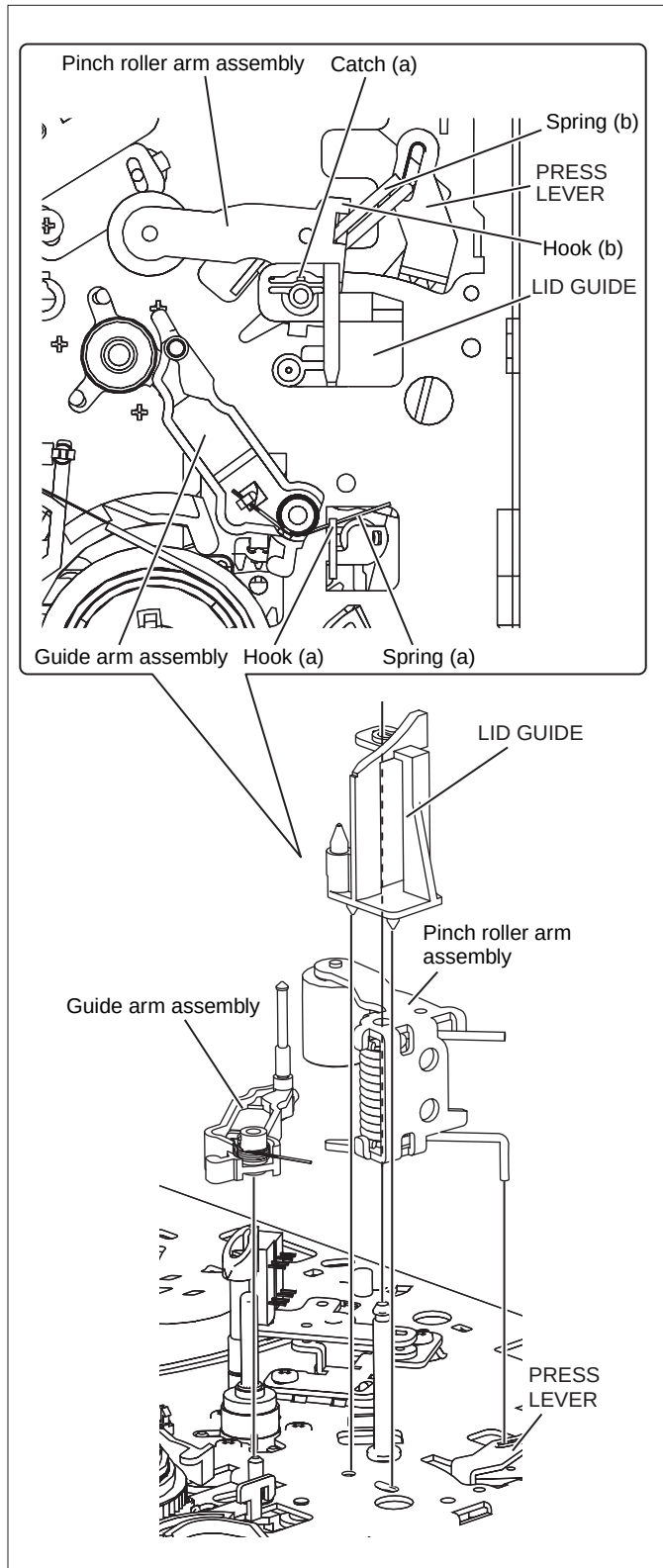


Fig. 2-2-3a

2.2.4 Idler arm, idler gear 1/2

2.2.4.1 Removal

- (1) Release the catches (a) and (b) to detach the idler arm.
- (2) Detach the idler gear 1/2.

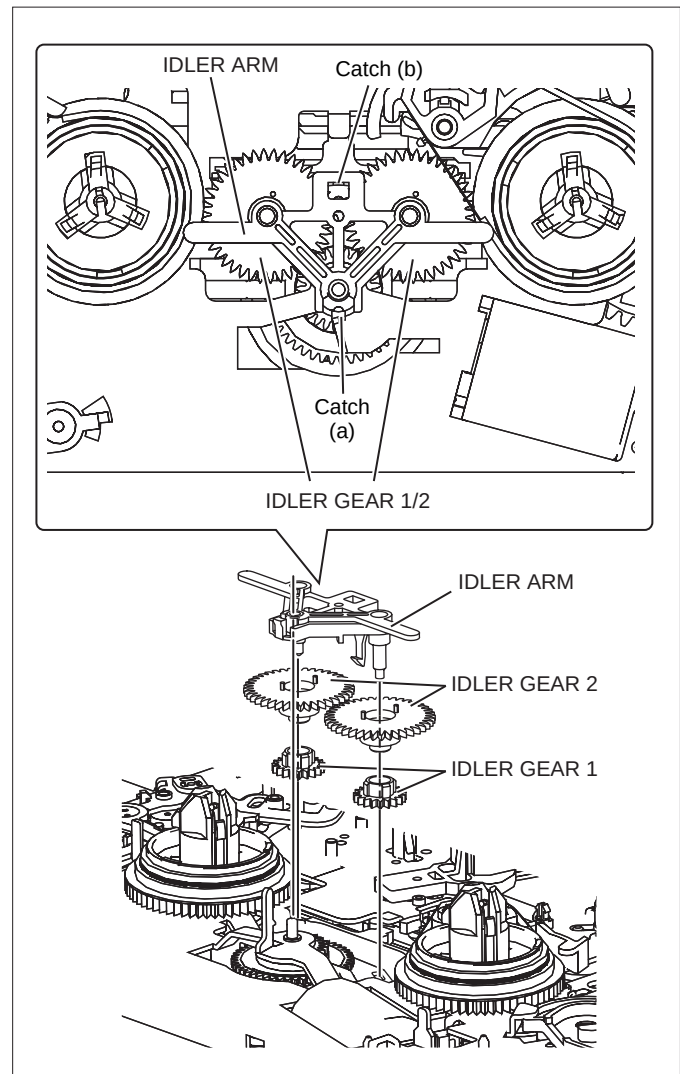


Fig. 2-2-4a

2.2.5 Main brake (T), brake lever, tension arm, reel disk (S/T), Rec safety lever

2.2.5.1 Removal

- (1) Remove the spring (a). (Detach section (b) of the spring (a).)
- (2) Release the catch (a) to detach the main brake (T).
- (3) Release the catch (b) to detach the reel disk (T) and the spacer.
- (4) Lift up and turn section (b) of the brake lever counterclockwise to remove the brake lever.
- (5) Remove the spring (b) from the hook (a).
- (6) Release the catch (c) to detach the tension arm.
- (7) Release the catch (d) to detach the reel disk (S) and the spacer.
- (8) Remove the spring (c) from the hook (b).
- (9) Turn the tension arm base in the direction shown by arrow (a) to release catch (e). Place the projections of the tension arm base to the holes (a) to detach the tension arm base.
- (10) While releasing the catch (f), turn the Rec safety lever counterclockwise to remove it.

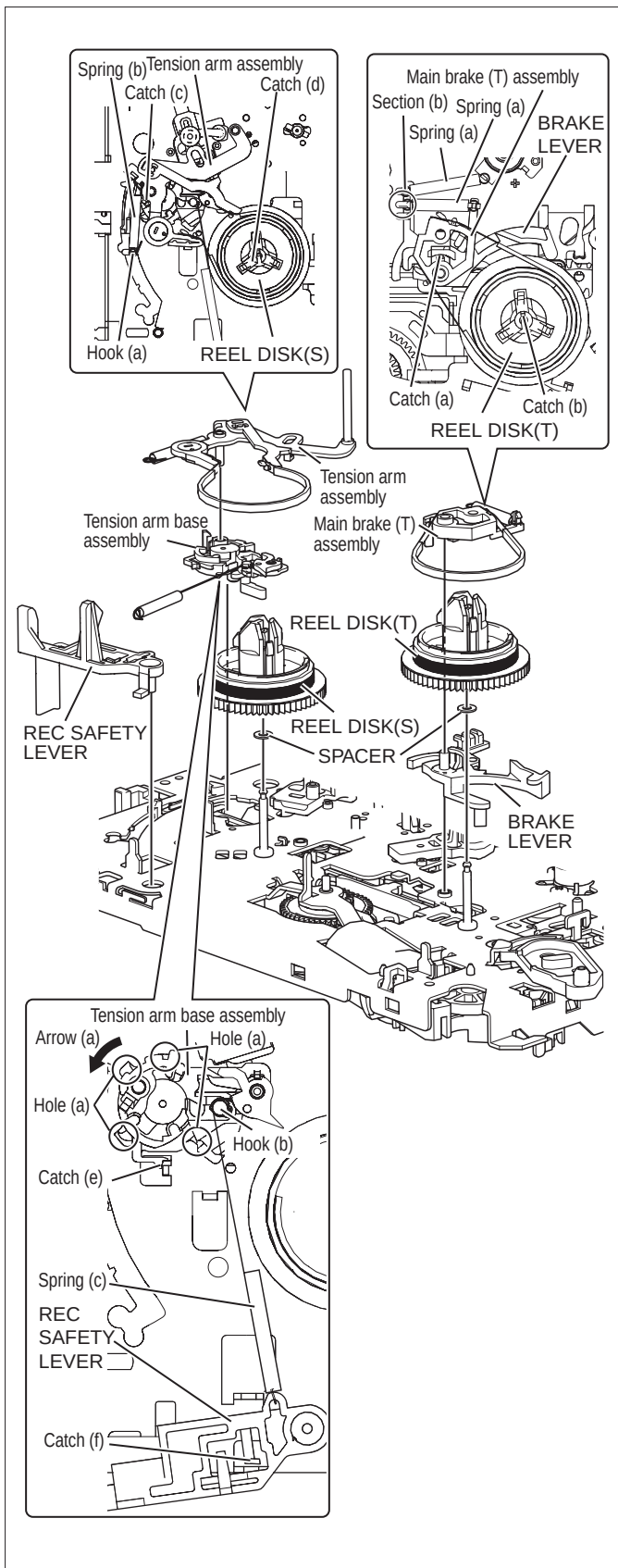


Fig. 2-2-5a

2.2.6 Press lever, control cam, capstan brake assembly, loading motor assembly

2.2.6.1 Removal

- (1) Remove the slit washer (a) to detach the press lever.
- (2) Release the slit washer (b) to detach the control cam.
- (3) Release the catch (b) to detach the capstan brake assembly.
- (4) Remove the solder (a).
- (5) Remove the screw (a).
- (6) Release the catches (c) and (d) to detach the loading motor assembly.

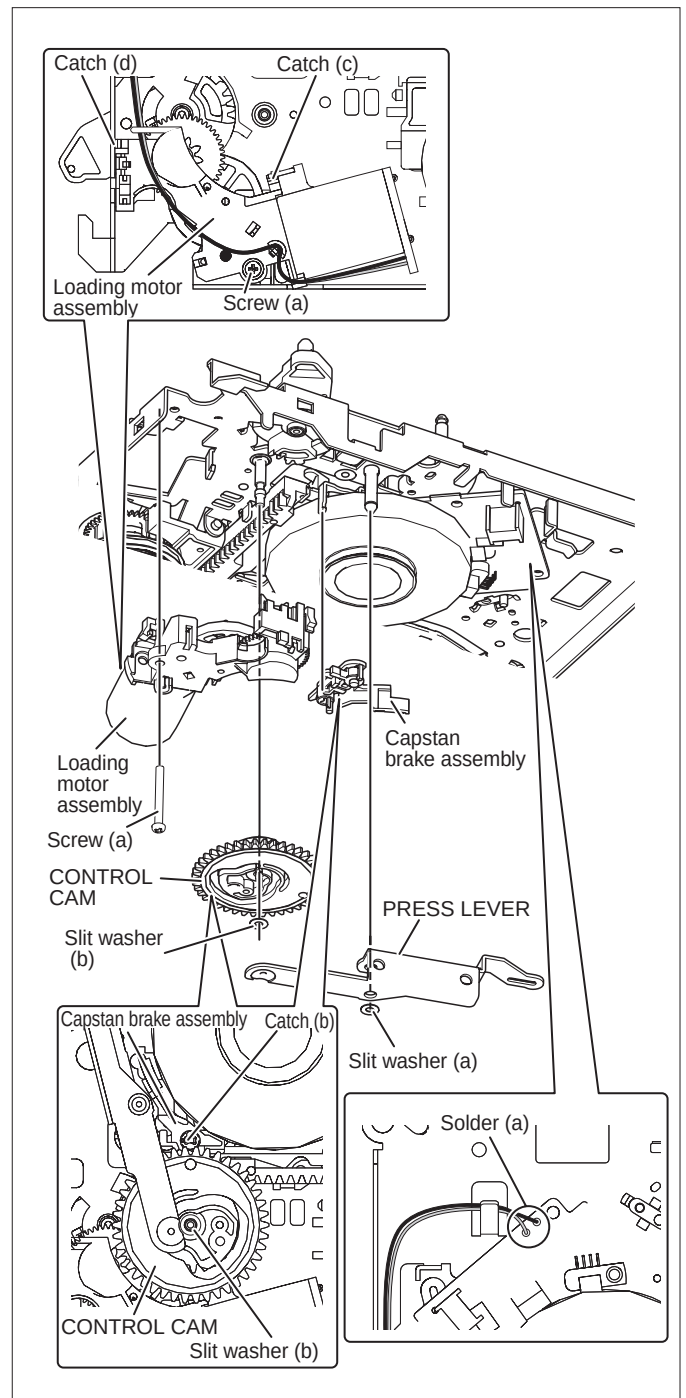


Fig. 2-2-6a

2.2.6.2 Installation (phase adjustment)

- (1) Attach the loading motor assembly to the main deck.
- (2) Secure the screw (a).
- (3) Solder the wire to section (a).
- (4) Arrange the wire along with the position guide (b).
- (5) Attach the capstan brake assembly to the main deck.
- (6) Place the main deck on the guide hole (a) of the control plate.
- (7) Place the main deck on the guide hole (b) of the drive lever.
- (8) Place the main deck on guide hole (c) of the control cam to install the control cam.
- (9) Move the capstan brake in the direction shown by the arrow (a) to attach the press lever to the shaft (a). Make sure that the boss of the press lever fits in the control cam, and that the shaft (b) of the pinch roller arm assembly connects with the hole of the press lever.
- (10) Attach slit washer (a) to shaft (a).

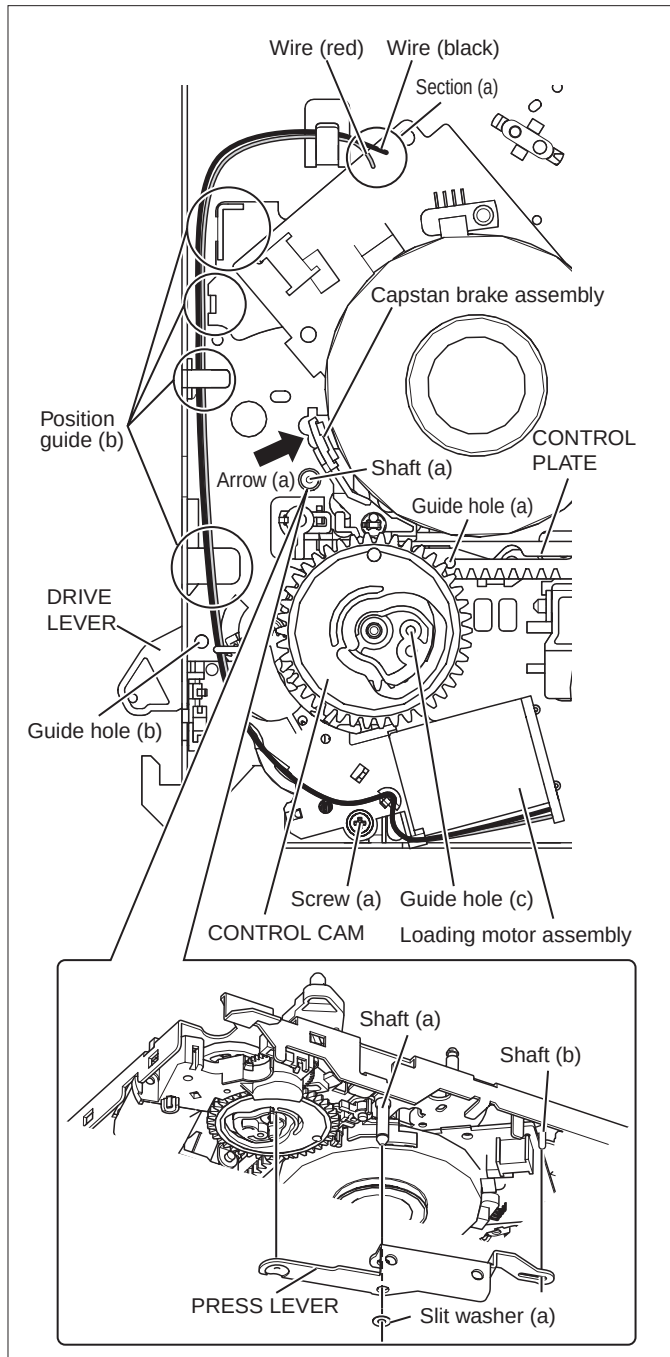


Fig. 2-2-6b

Note:

- When replacing the worm bearing of the loading motor assembly, attach it according to the following specification. If worm bearing is not attached correctly, a mechanism noise may occur. (See Fig. 2-2-6c)

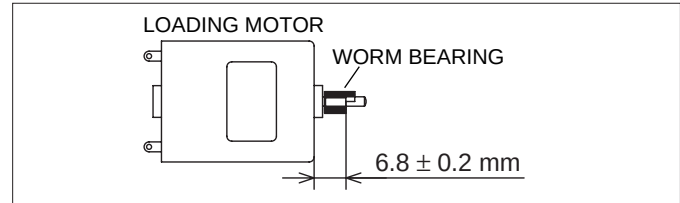


Fig. 2-2-6c

2.2.7 Capstan motor, load gear, control plate

2.2.7.1 Removal

- (1) Detach the belt.
- (2) Check that the FFC connector on the drum is disconnected.
- (3) Release the catch (a) to remove the FFC wire.
- (4) Remove the screws (a) to detach the capstan motor.
- (5) Remove the screws (b) to detach the fixing plate.
- (6) Release the catch (b) to detach the load gear.
- (7) Turn the load gear (S/T) in the loading direction to detach it.
- (8) Remove the control plate.

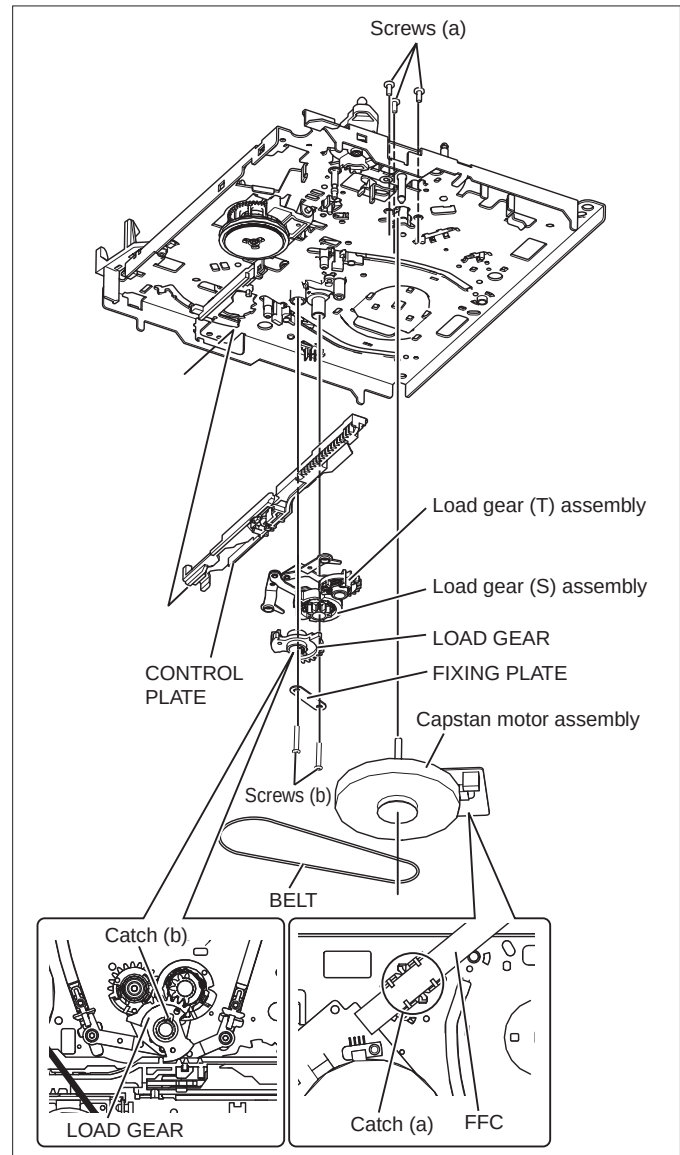


Fig. 2-2-7a

2.2.7.2 Installation (phase adjustment)

- (1) Place the main deck on the guide hole (a) of the tension arm lever.
- (2) Place the main deck on the guide hole (b) of the brake lever.
- (3) Attach the control plate to align with the position guide (a).
- (4) Place the hole (c) of the load arm (T) on the pole base (T) and the load gear (T) on the load gear base.
- (5) Place the hole (d) of the load arm (S) on the pole base (S) and the load gear (S) on the load gear base. Be sure to align the guide mark (e) of the load gear (T) to that of the load gear (S).
- (6) Turn the load gear (S/T) in the unloading direction to place the main deck on the guide hole (f) of the load gear (T).
- (7) Place the main deck on the guide hole (g) of the control plate.
- (8) Attach the load gear on the load gear base so that the control plate is placed on the edge (h) of the load gear.
- (9) Place the fixing plate on the shaft of the load gear base and secure the screws (b).

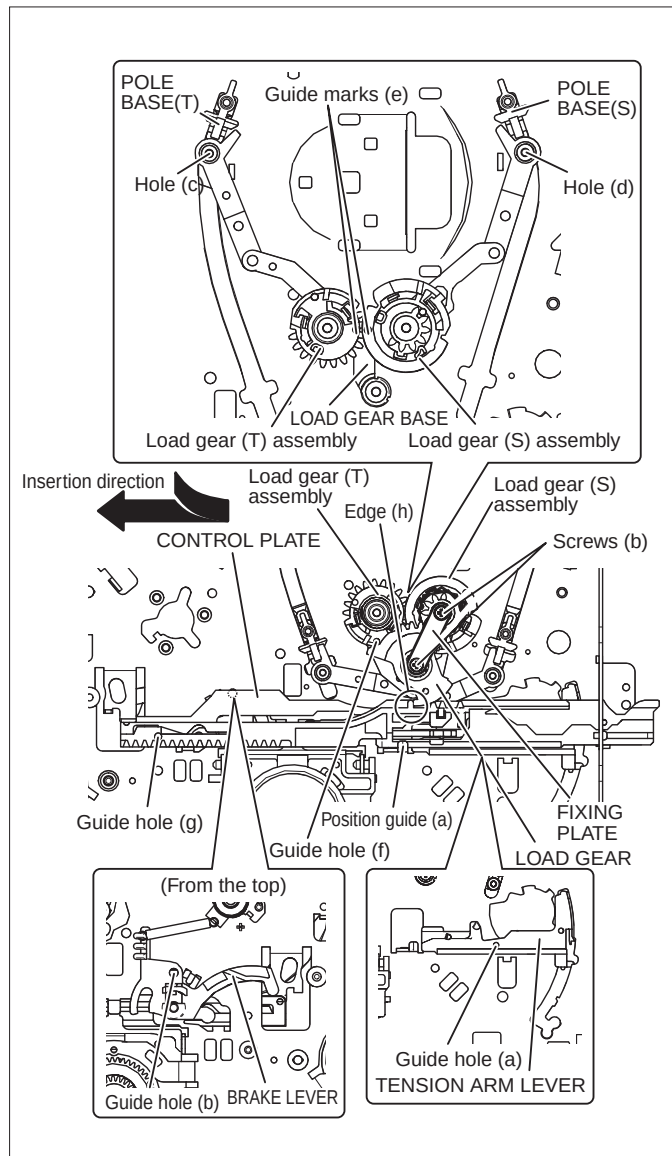


Fig. 2-2-7b

2.2.8 Clutch unit assembly, direct gear

2.2.8.1 Removal

- (1) Remove the slit washer (a) to detach the clutch unit assembly.
- (2) Remove the spring (a) and the direct gear.

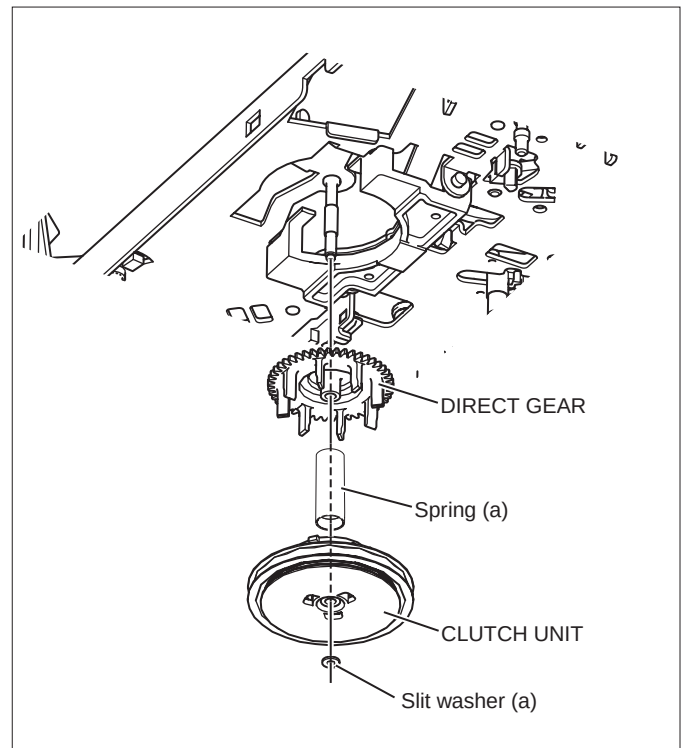
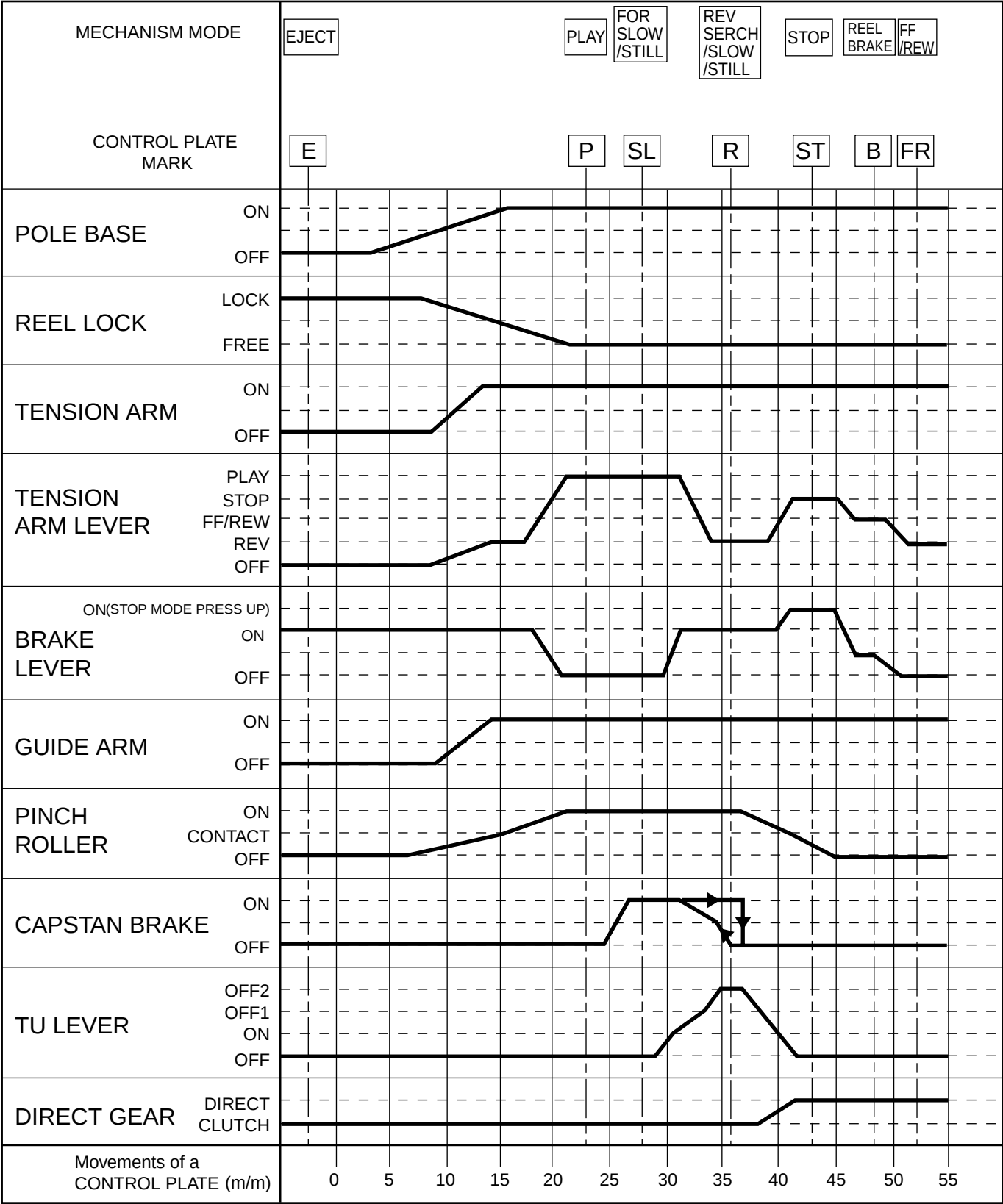


Fig. 2-2-8a

2.3 Mechanism timing chart



SECTION 3 ADJUSTMENT

3.1 Before adjustment

3.1.1 Precaution

- The adjustments of this unit include the mechanism compatibility and electrical adjustments. During the performance of this work, be sure to observe the precautions for each type of adjustment.
- If there is a reference to a signal input method in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.
- Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.

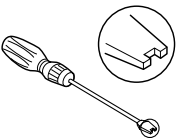
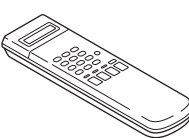
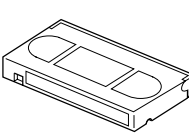
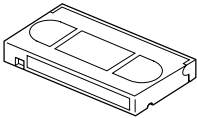
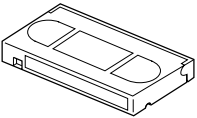
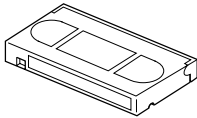
3.1.2 Required test equipments

- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Signal generator: RF / IF sweep / marker
- Signal generator: staircase, color (colour) bar [PAL/SECAM]
- Recording tape
- Digit-key remote controller(provided)

3.1.3 Required adjustment tools

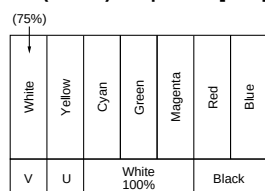
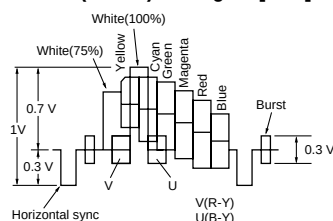
	Machanism compatibility adjustment	Electrical adjustment
Roller driver	○	—
Jig RCU	—	○
Back tension cassette gauge	○	—
Alignment tape(MHPE)	○	○
Alignment tape(MHPE-L)	○	○

○ : Used — : Not used

Roller driver PTU94002	Jig RCU PTU94023B	Back tension cassette gauge PUJ48076-2
		
Alignment tape (SP, staircase, PAL) MHPE	Alignment tape (LP, staircase, PAL) MHPE-L	Alignment tape (EP, staircase, NTSC) MHP-L
		

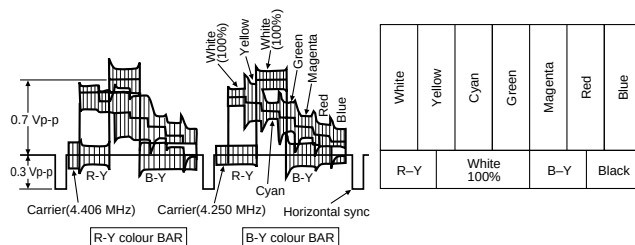
3.1.4 Color (colour) bar signal, color (colour) bar pattern

- Color(colour) bar signal [PAL]
- Color(colour) bar pattern [PAL]



- Colour bar signal [SECAM]

- Colour bar pattern [SECAM]



3.1.5 Switch settings

When adjusting this unit, set the VCR mode and switches as described below.

- When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DIS-ASSEMBLY.)

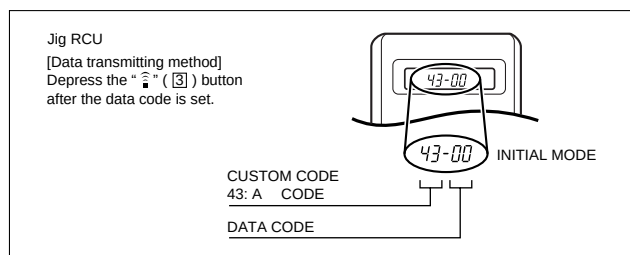


Fig. 3-1-4a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired. If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF
BLUE BACK	OFF

3.1.6 Manual tracking mode (Auto tracking ON/OFF) setting

- (1) In order to set to the manual tracking mode during tape playback, press the "SP/EP(LP)" button on the remote control unit.
 - Each press of the button switches the auto tracking ON or OFF.
 - When the auto tracking is OFF, the monitor screen displays "AT: OFF".
 - When the manual tracking mode is set, the tracking is placed at the center position.
- (2) Press "channel +/-" to adjust the tracking manually.

3.1.7 EVR adjustment

Some of the adjustments require the adjustment performed by the EVR system. The main unit have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- In the EVR adjustment mode, the value is varied with the channel buttons (+, -). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.
- When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input. The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.
- When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.

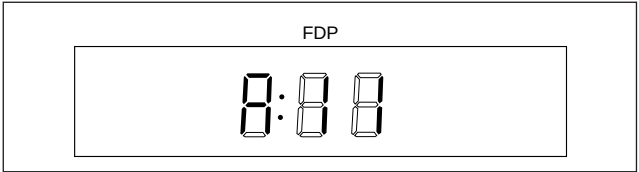


Fig. 3-1-7a EVR mode

3.2 Mechanism compatibility adjustment

Notes:

- Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.
- To prevent damaging the alignment tape in the compatibility adjustment, prepare a cassette tape (for self-recording/play-back), perform a test on it by transporting it and making sure that the tape is not bent by the tape transport mechanisms such as in the guide rollers.(See Fig.3-2-2a)

3.2.1 Tension pole position

Notes:

- This adjustment must be performed every time the tension band is replaced.

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B1) (B2)	• Play back position • Eject end
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 – 5 × 10 ⁻³ Nm)

- (1) Play back the back tension cassette gauge (A).
- (2) Check that the indicated value on the left side gauge is within the specified value (G).
- (3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.(See Fig.3-2-1a.)
 - 1) Remove the top frame, cassette holder and side frames (L/R) all together. (See “section 2 mechanism”.)
 - 2) Rotate the loading motor gear to move the control plate so that the triangular stamping to the left of the “P” stamping is aligned with the stamping (a) on the main deck. This positioning is mode (B1).
 - 3) Adjust by turning the adjustment pin so that the tip of the tension arm is aligned with the stamping (b) on the main deck.
 - 4) Rotate the reel disk (S) by about one turn clockwise and make sure that the round hole of the adjustment pin is located in the “OK” range. If it is outside this range, restart the adjustment from the beginning.

After completion of the adjustment, rotate the loading gear motor to return it to the mode (B2) position.

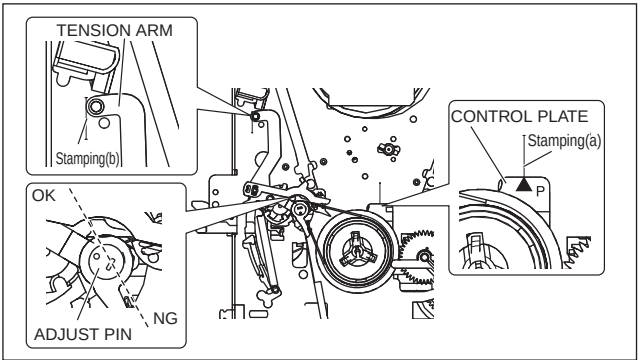


Fig. 3-2-1a

3.2.2 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, staircase, PAL) [MHPE] • Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- Play back the alignment tape (A1).
- Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- Set the VCR to the manual tracking mode.
- Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 3-2-2b.)
- Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear. If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 3-2-2b.)
- Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
- Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
- After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 3-2-2a.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

- Repeat steps (1) to (8) by using the alignment tape (A2).

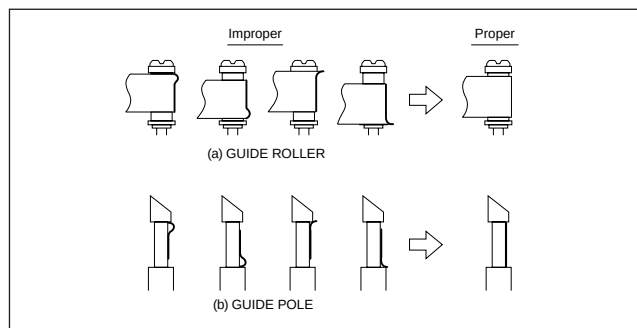


Fig. 3-2-2a

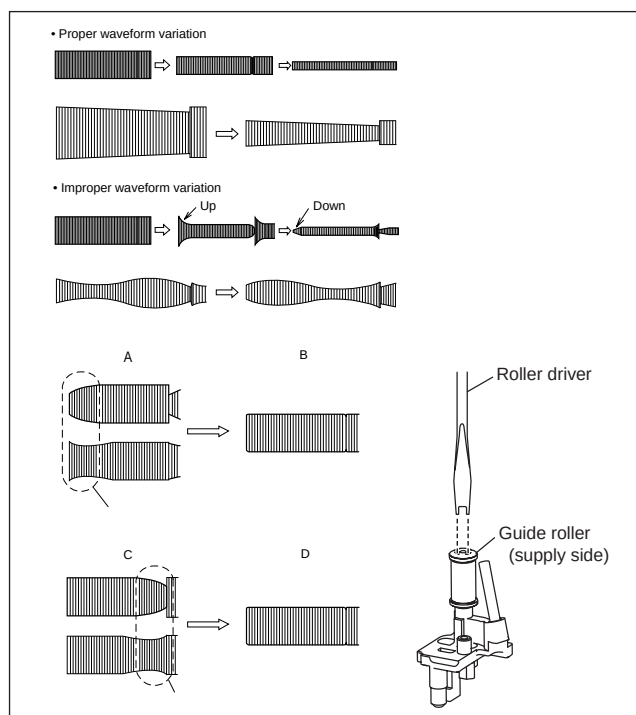


Fig. 3-2-2b

3.2.3 Height and tilt of the A/C head

Note:

- Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See "section 2 mechanism".)

Signal	(A)	• Alignment tape(SP, staircase, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

- Play back the alignment tape (A).
- Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
- Set the VCR to the manual tracking mode.
- Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

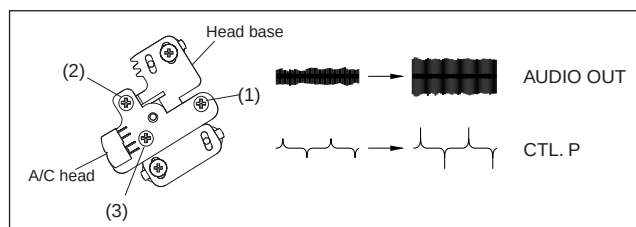


Fig. 3-2-3a

3.2.4 A/C head phase (X-value)

Signal	(A1) (A2)	• Alignment tape(SP, staircase, PAL) [MHPE] • Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB, FM)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Set the VCR to the manual tracking mode.
- (4) Loosen the screws (4) and (5), then set the Roller driver to the innermost projected part of the A/C head. (See Fig. 3-2-4a.)
- (5) Rotate the roller driver so that the A/C head comes closest to the capstan. From there, move the A/C head back gradually toward the drum until the point where the FM waveform is maximized for the second time, and then tighten the screws (4) and (5) temporarily.
- (6) Play an alignment tape (A2) and set to the manual-tracking mode.
- (7) Fine-adjust A/C head base position to maximize the FM waveform, and then tighten the screws (4) and (5) firmly.
- (8) Play alignment tapes (A1) and (A2) and confirm that the FM waveforms are maximized when the tracking is at the center position.

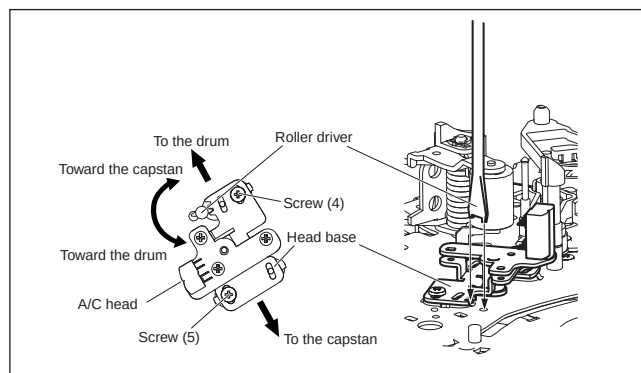


Fig. 3-2-4a

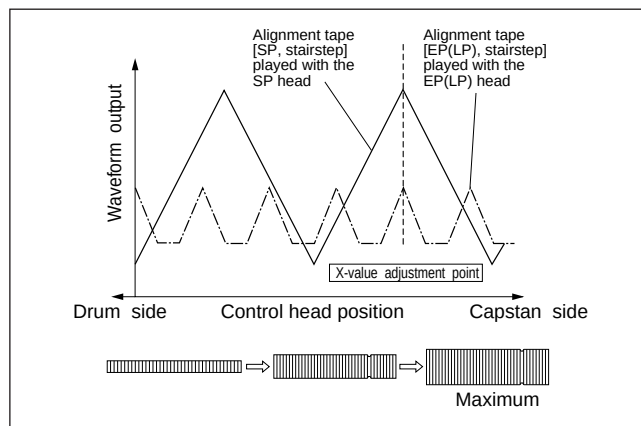


Fig. 3-2-4b

3.3 Electrical adjustment

Note:

The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry. In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.3.1 Servo circuit

3.3.1.1 Switching point

Signal	(A1) (A2) (A3)	• Stairstep signal • Alignment tape (LP, staircase, PAL) [MHPE-L] • Alignment tape (EP, staircase, NTSC) [MHP-L]
Mode	(B)	• PB • TBC:OFF
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB, FM)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F) (F1)	• Jig RCU: Code "5A" • Jig RCU: Code "51" or "52"
Specified value	(G) (G)	• 7.5 ±0.5 H • 8.0 ±0.5 H (PAL) • 7.5 ±0.5 H (NTSC)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

[For the model without TBC function]

- (1) Play back the signal (A1) of the alignment tape (A2).
- (2) Apply the external trigger signal to D. FF (E) to observe the VIDEO OUT waveform and V. PB FM waveform at the measuring points (D1) and (D2).
- (3) Set the VCR to the manual tracking mode.
- (4) Adjust tracking so that the V. PB FM waveform becomes maximum.
- (5) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
- (6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
- (7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G).

[For the model equipped with TBC function]

Steps (1) to (4) are the same as previous steps (1) to (4).

- (5) Transmit the code (F1) from the Jig RCU to adjust so that the trigger point of the VIDEO OUT waveform is changed from the trailing edge of the V. sync signal becomes the specified value (G1).
- (6) Set the VCR to the stop mode or eject mode.
- (7) Play back the signal (A1) of the alignment tape (A3).
- (8) Repeat steps (2) to (6).

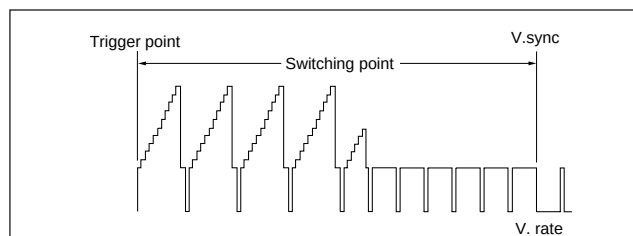


Fig. 3-3-1-1a Switching point

3.3.1.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• VHS SP • VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code "71" or "72"
Specified value	(G)	• minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (2) Set the VCR to the manual tracking mode.
- (3) Set the VCR to the FWD slow (+1/6x) mode.
- (4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
- (5) Set the VCR to the Stop mode.
- (6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
- (7) Repeat steps (3) to (6) in the REV slow (-1/6x) mode.
- (8) Repeat steps (1) to (7) in the mode (B2).

Note:

- **For FWD slow (+1/6x) playback, transmit the code "08" from the Jig RCU to enter the slow playback mode, and transmit the code "D0" for REV slow (-1/6x) mode.**

3.3.2 Video circuit

3.3.2.1 EE Y/PB Y (S-VHS/VHS) level

Signal	(A1) (A2) (A3)	• Ext. S-input • Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2) (B3)	• EE SP • S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode	(F1)	• Jig code "57"
EVR address	(F2) (F3) (F4)	• A : 11 • Jig code "21" twice • Jig code "18" or "19" (Channel +/-)
Specified value	(G)	• 1.00 ± 0.05 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Input the signal (A3) from the input point (A1).
- (2) Set the VCR to the mode (B1).
- (3) Observe the Y OUT waveform at the measuring point (D).
- (4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (5) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (6) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the Y OUT waveform becomes the specified value (G).
- (7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (8) Input the signal (A3) from the input point (A2).
- (9) Repeat steps (3) to (7) in the mode (B1).

- (10) Record the signal (A3) in the mode (B2), and play back the recorded signal.
- (11) Set the VCR to the manual tracking mode.
- (12) Repeat steps (3) to (7) in the mode (B2).
- (13) Record the signal (A3) in the mode (B3), and play back the recorded signal.
- (14) Set the VCR to the manual tracking mode.
- (15) Repeat steps (3) to (7) in the mode (B3).

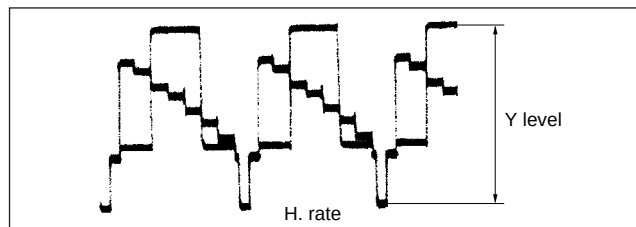


Fig. 3-3-2-1a EE/PB Y level

3.3.3 Audio circuit

Notes:

- **GND (Ground) should be taken from the Tuner shield case.**

3.3.3.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• VR2251
Specified value	(G1) (G2)	• 600 ± 100 mVp-p • More than 400 mVp-p

- (1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
- (2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
- (3) Set the VCR to the manual tracking mode.
- (4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
- (5) Adjust the Adjustment part (F) so that the A. PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)
- (6) If the specified value (G1) is not obtained, adjust the Adjustment part (F) so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)

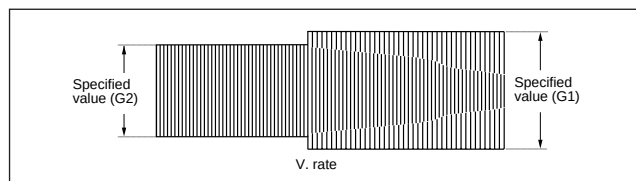


Fig. 3-3-3-1a Audio REC FM

3.3.4 Syscon circuit [EU/EK MODEL]

Note:

- **When perform this adjustment, remove the Mechanism assembly.**

3.3.4.1 Timer clock

Signal (A)	• No signal
Mode (B)	• EE
Equipment (C)	• Frequency counter
Measuring point (D1)	• IC3001 pin 61
Short point (D2)	• IC3001 pin 24
(D3)	• C3026 + and –
Adjustment part (F)	• C3025 (TIMER CLOCK)
Specified value (G)	• 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 μ sec)

- (1) Connect the frequency counter to the measuring point (D1).
- (2) Connect the short wire between the short point (D2) and Vcc (5V).
- (3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
- (4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
- (5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

3.3.5 PAL/SECAM converter circuit [MS MODEL]

Note:

- **Unless otherwise specified in this P/S Converter circuit adjustments, all measuring points and adjustment parts are located on the S-P Converter board.**

3.3.5.1 Colour difference level

Signal (A1)	• Color (colour) bar signal [SECAM]
Mode (B)	• EE
Equipment (C)	• Oscilloscope
Measuring point (D)	• CN1601 Pin 7
Adjustment part (F1)	• VR1602 (B-Y ADJ)
(F2)	• VR1601 (R-Y ADJ)
Specified value (G1)	• 460 ± 20 mVp-p (B-Y)
(G2)	• 620 ± 20 mVp-p (R-Y)

- (1) Observe the C (converted colour) waveform at the measuring point (D).
- (2) Adjust the adjustment part (F1) so that the higher level of the Yellow and Blue of the C waveform becomes the specified value (G1).
- (3) Adjust the adjustment part (F2) so that the higher level of the Green and Magenta of the C waveform becomes the specified value (G2).

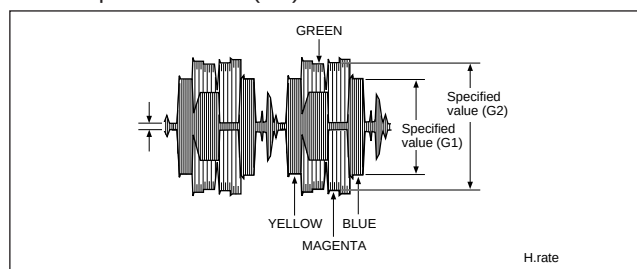


Fig. 3-5-1a Colour difference level

3.3.5.2 SECAM burst position

Signal (A1)	• Ext. input
(A2)	• Color (colour) bar signal [SECAM]
Mode (B)	• EE
Equipment (C)	• Oscilloscope
Measuring point (D1)	• CN1601 Pin 7
(D2)	• CN1601 Pin 3
Adjustment part (F)	• VR1603
Specified value (G)	• $Tr = 5.6 \pm 0.1$ μ sec

- (1) Observe the waveforms appeared at the measuring points (D1) and (D2).
- (2) Adjust the adjustment part (F) so that the waveforms timing width between the H-SYNC and the colour burst signal becomes the specified value (G).

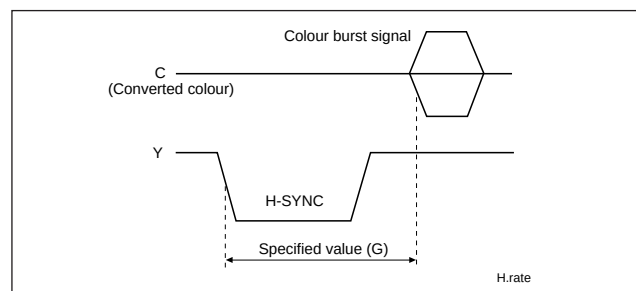


Fig. 3-5-2a PAL burst position



VICTOR COMPANY OF JAPAN, LIMITED
VIDEO DIVISION

S40894

JVC

SCHEMATIC DIAGRAMS

VIDEO CASSETTE RECORDER

HR-S6950EU, HR-S6955MS, HR-S7950EU, HR-S7955EK, HR-S7955MS

CD-ROM No.SML200207



SHOWVIEW[®]
DELUXE
Hi-Fi S VHS
625
Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S7950EU.)*

GENERAL

Power requirement : AC 220 V – 240 V~, 50 Hz/60 Hz
Power consumption
Power on : 18 W
Power off : 3.6 W
Temperature
Operating : 5°C to 40°C
Storage : –20°C to 60°C
Operating position : Horizontal only
Dimensions (WxHxD)
: 400 mm x 94 mm x 270 mm
Weight : 3.4 kg
Format : S-VHS/VHS PAL standard
Maximum recording time
(SP) : 240 min. with E-240 video cassette
(LP) : 480 min. with E-240 video cassette
(EP) : 720 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines 50 fields
Recording system : DA4 (Double Azimuth) head helical scan system
Signal-to-noise ratio: 45 dB
Horizontal resolution
(SP/LP) : 250 lines (VHS)
400 lines (S-VHS)
(EP) : 220 lines (VHS)
350 lines (S-VHS)
Frequency range : 70 Hz to 10,000 Hz (Normal audio)
20 Hz to 20,000 Hz (Hi-Fi audio)

Input/Output : 21-pin SCART connectors:
IN/OUT x 1, IN/DECODER x 1
RCA connectors:
VIDEO IN x 1, AUDIO IN x 1,
AUDIO OUT x 1
S-Video connector:
IN x 1, OUT x 1

TUNER/TIMER

TV channel storage capacity : 99 positions (+AUX position)
Tuning system : Frequency synthesized tuner
Channel coverage : VHF 47 MHz – 89 MHz/
104 MHz – 300 MHz/
302 MHz – 470 MHz
UHF 470 MHz – 862 MHz
Aerial output : UHF channels 22 – 69 (Adjustable)
Memory backup time : Approx. 10 min.

ACCESSORIES

Provided accessories : RF cable,
Infrared remote control unit,
"R6" battery x 2

*Specifications shown are for SP mode unless otherwise specified.
E. & O.E. Design and specifications subject to change without notice.*

V15S1/S2/S15

SECTION 4 CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

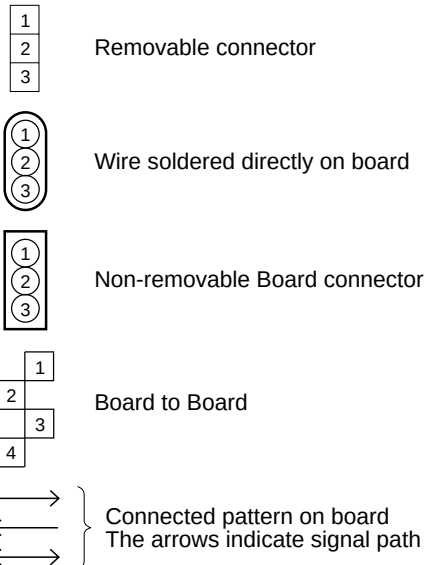
- 1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K: K Ω (1000 Ω), M: M Ω (1000K Ω)
- 2) All capacitance values are in μ F, (P: PF).
- 3) All inductance values are in μ H, (m: mH).
- 4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

AUX or AUX(L) : Active at low

3. Interpreting Connector indications

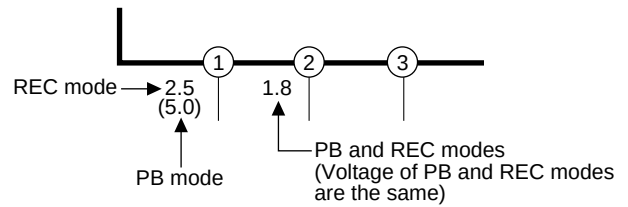


4. Voltage measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
— : Unmeasurable or unnecessary to measure
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

4) Indication on schematic diagram

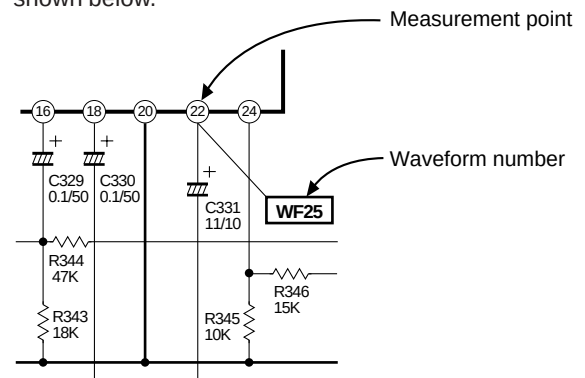
Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



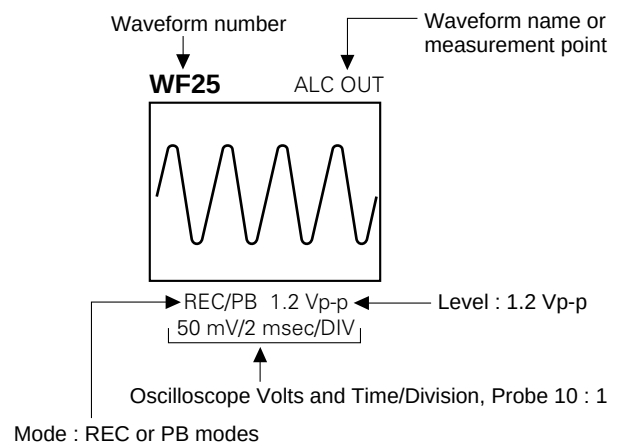
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
- 4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

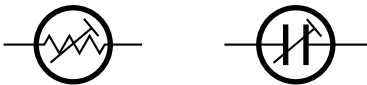
-  Playback signal path
-  Playback and recording signal path
-  Recording signal path (including E-E signal path)
-  Capstan servo path
-  Drum servo path

(Example)

-  R-Y Playback R-Y signal path
-  Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

“OPEN” is indicated by the parts not mounted on the circuit board.



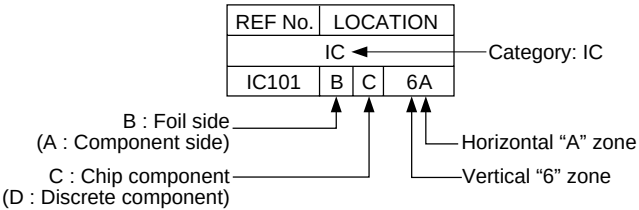
CIRCUIT BOARD NOTES

1. Foil and Component sides

- 1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

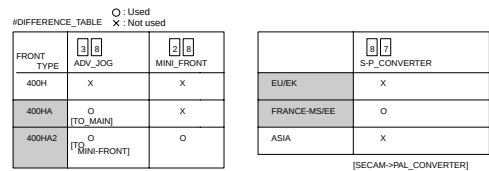
Parts location are indicated by guide scale on the circuit board.



Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

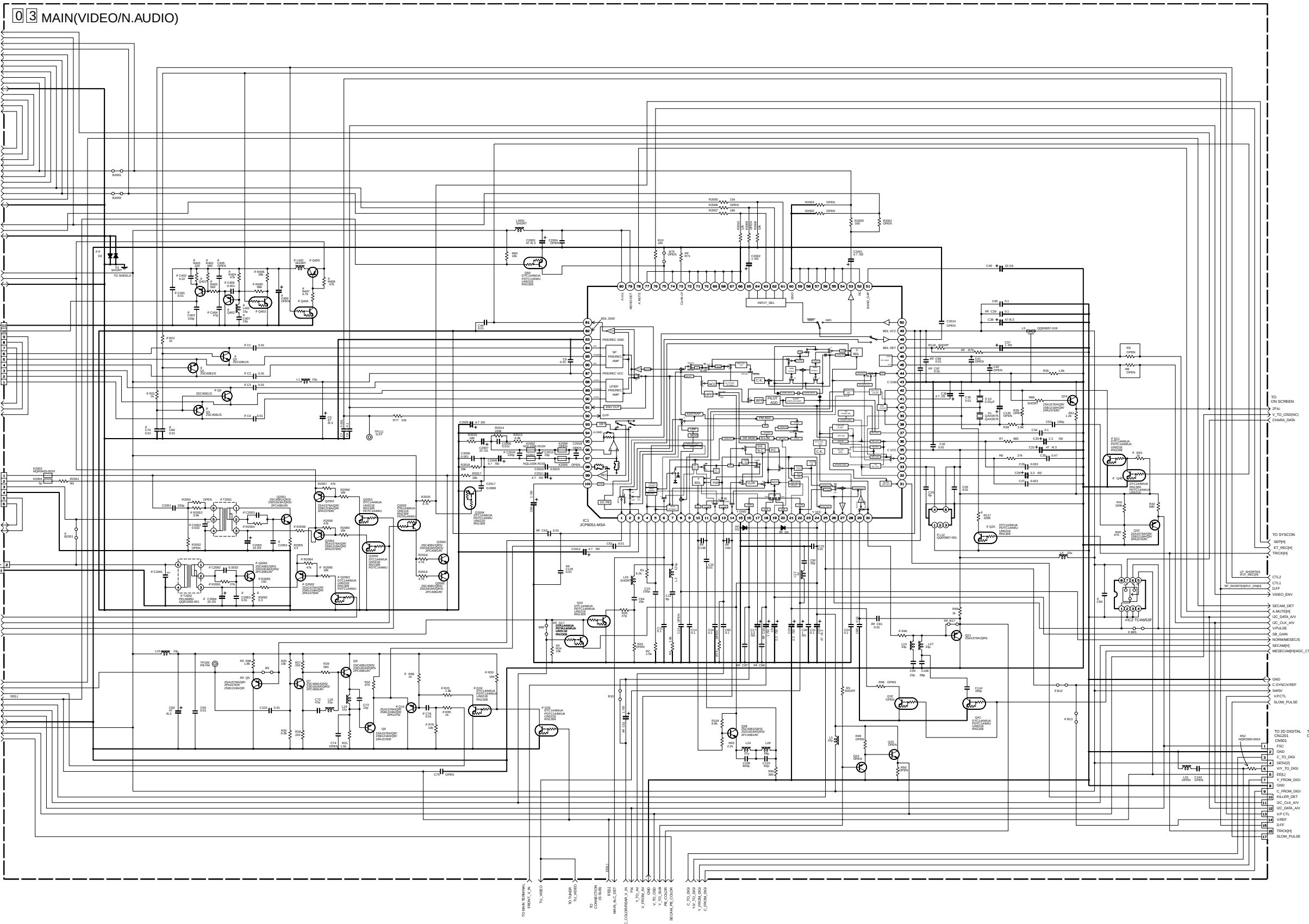
1
2
3
4
5



96	
93	
92	
91	
87	S-P CONVERTER
76	
58	DRUM MOTOR
57	3in1 MDA/CAP MOTOR
55	LOADING MOTOR
39	JOG
38	ADV JOG
36	S JACK
28	MINI FRONT
14	DEMODO
12	A/C HEAD
9	
5	2D/3D DIGITAL
3	MAIN
NO	NAME

4.2 MAIN (VIDEO/N.AUDIO) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



#DIFFERENCE TABLE

	CN1	FLY ERASE	H SHORT	PRE IN	PAL EP TRICK	C TRAP	3D	FOR ME	Function	T2051	R2051	R2053	R2054	R2056	C2053	C2054	C2061	C2061-Q2063
V15 SP LINEUP																		
S690E11(1)	1-9	X	O	0.01	O	X	O	X	X	X	X	X	X	X	X	X	X	X
S790E11(1)	1-9	X	O	0.01	O	X	O	X	X	X	X	X	X	X	X	X	X	X
S790E11(2)	1-11	O	X	0.1	O	X	O	X	X	X	X	X	X	X	X	X	X	X
S690E11(3)	1-9	X	O	0.01	O	X	O	X	X	X	X	X	X	X	X	X	X	X
S690E11(2)	1-11	O	X	0.1	O	X	O	X	X	X	X	X	X	X	X	X	X	X

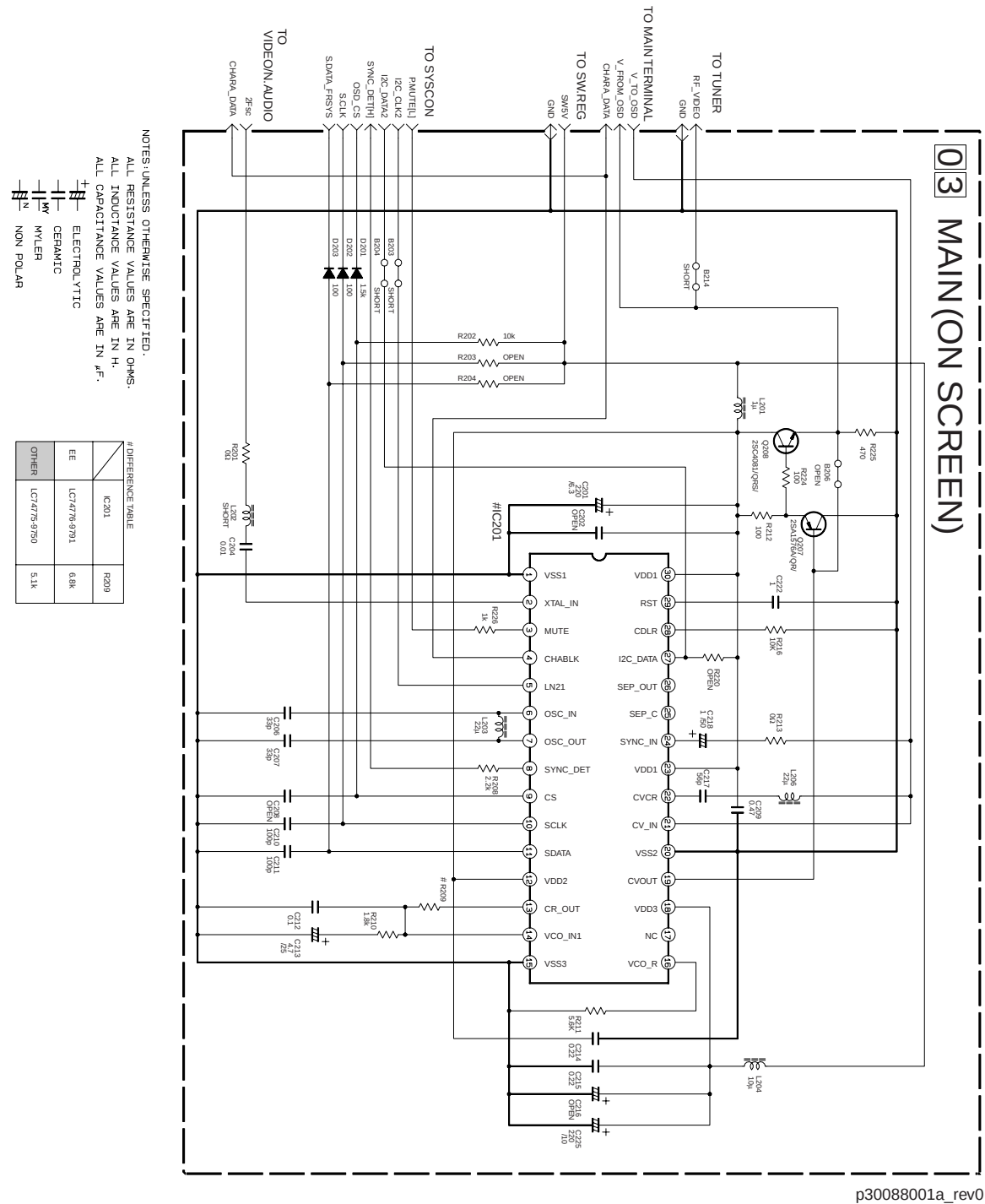
MARKS ARE NOT MOUNTED ALL MODELS

MARKS	YES	NO
0	Used	Not used
X	Not used	Used

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN pF.
ELECTROLYTIC
CERAMIC
MYLAR
NON POLAR
ALL NPN TYPE TRANSISTORS ARE 2SC4081QR/S or 2SD1819A/QR/S or 2PC4081R/S
ALL PNP TYPE TRANSISTORS ARE 2SA1515A/QR/S or 2SD1819A/QR/S or 2SA1515R/S
ALL NPN TYPE DIGITAL TRANSISTORS ARE 6TC144WUA or UN611E or RN1309 or PGT144WU
ALL PNP TYPE DIGITAL TRANSISTORS ARE 6TC144WUA or UN611E or RN1309 or PGT144WU

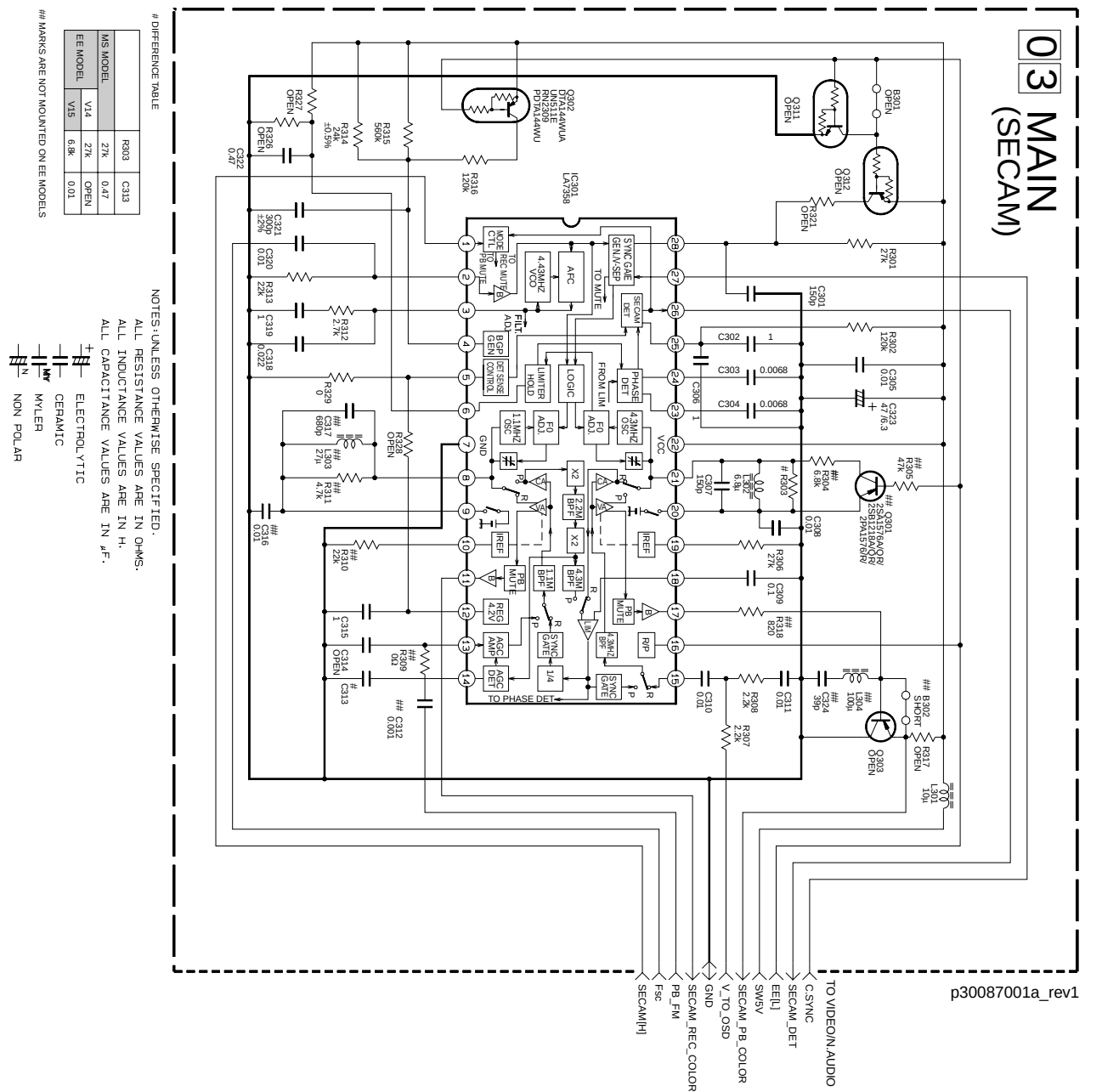
4.3 MAIN (ON SCREEN) SCHEMATIC DIAGRAM

*Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.*



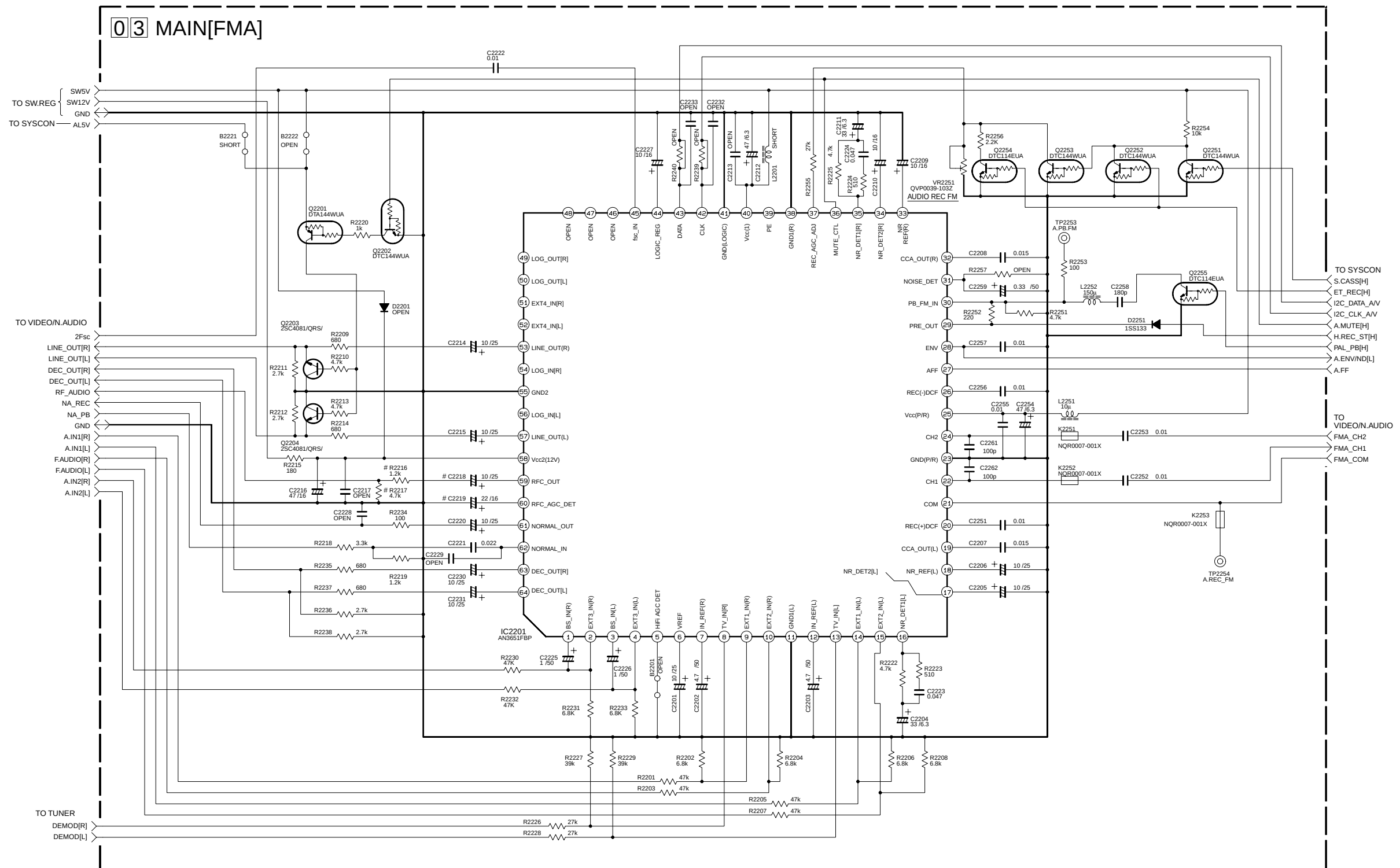
4.4 MAIN (SECAM) SCHEMATIC DIAGRAM [HR-S6955MS/S7955MS]

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



4.5 MAIN (FMA) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



#DIFFERENCE TABLE

1 O : Used
 X : Not used

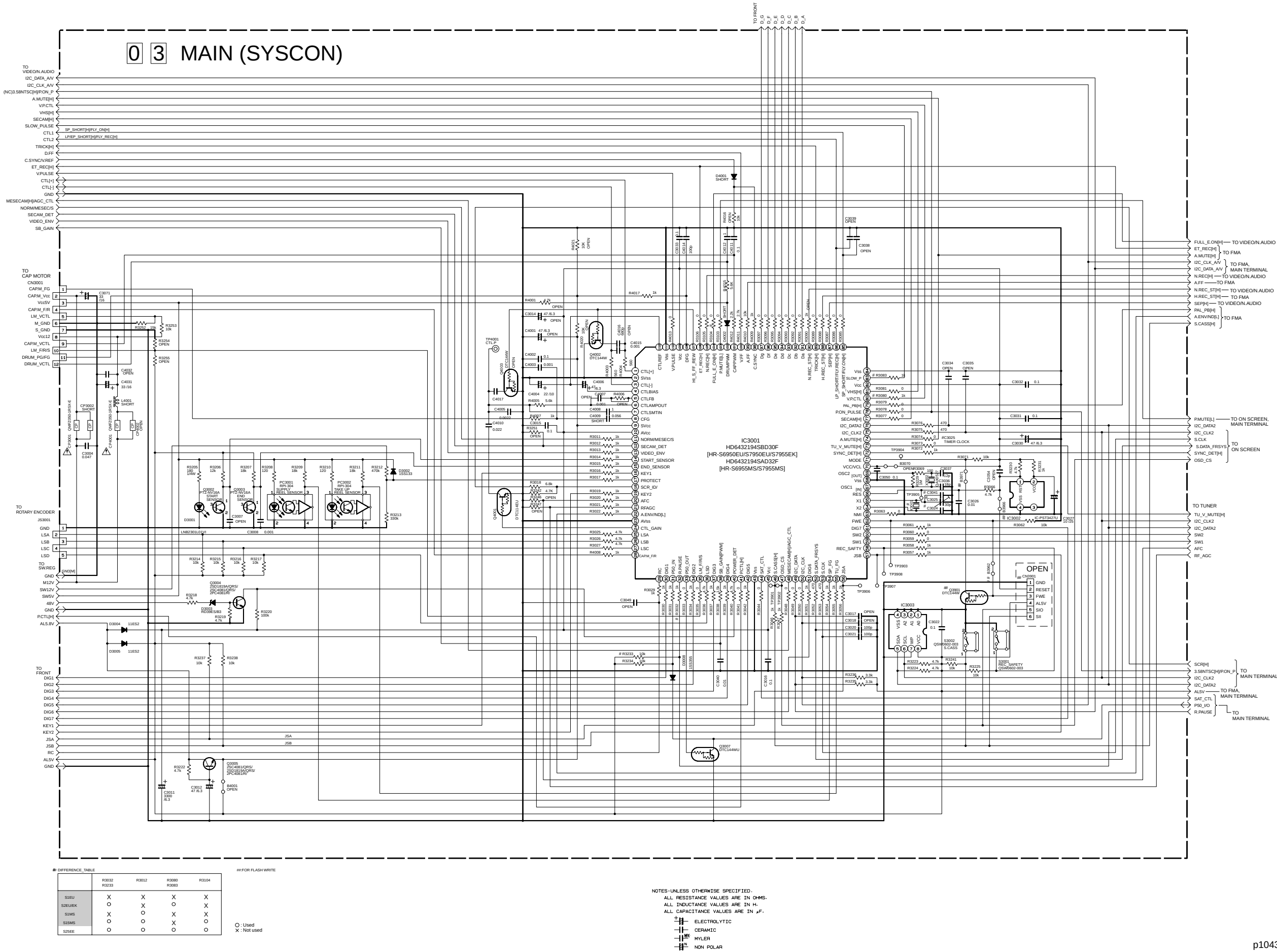
RF OUT	C2218	C2219	R2216	R2217
YES			O	
NO			X	

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

	ELECTROLYTIC
	CERAMIC
	MYLER
	NON POLAR

4.6 MAIN (SYSCON) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



5



3

2

1

	ELECTROLYTIC
	CERAMIC
	MYLER
	NON POLAR

5

4



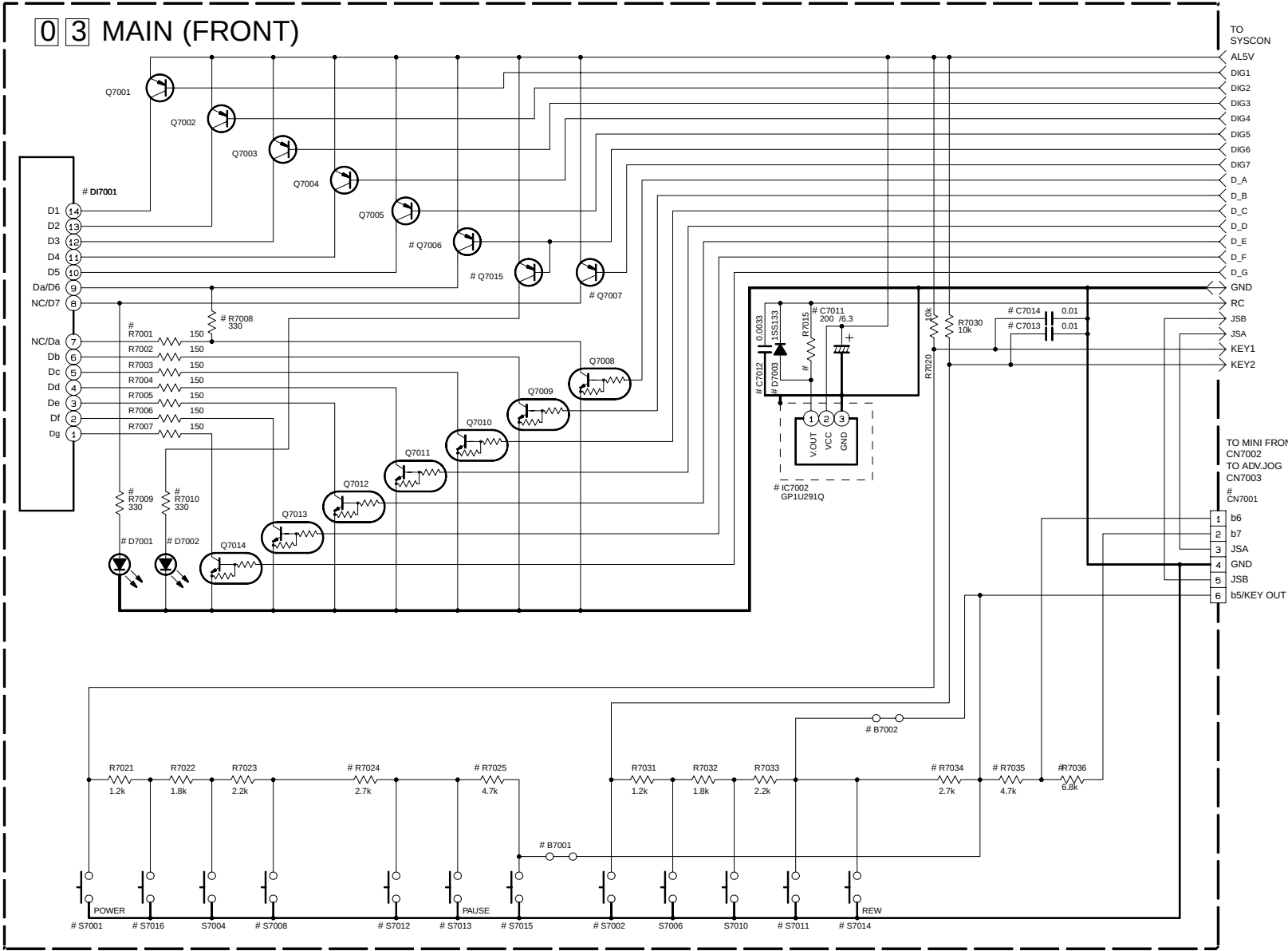
2

1

			EUEK	FRANCE MS	EE
TUNER	TU6001		ALPS	LG	ALPS
			QAU6201	QAU6206	QAU6201
ATS+		R8080	3k2	3k2	X
		L6001	10μ	10μ	10μ
SW5V		C6007	X	X	X
		C6008	0.01	X	0.01
RF5V		C6012	X	X	X
		C6013	0.01	0.01	0.01
BT2	RF CONV.	C6016	X	X	X
	TUNER	C6005	X	X	X
		C6006	X	X	X
RF CONV.	LC	R6051	100	X	100
		C6063	X	X	X
		R6052	100	X	100
		C6062	X	X	X
	AUDIO IN	R6056	100	X	100
		C6056	○	X	○
	VIDEO IN	R6050	○	X	○
		C6055	○	X	○
TUNER LC	C6020	X	X	X	
	C6021	X	X	X	
SYSTEM SW	C6027	X	X	X	
	C6028	X	X	X	
AUDIO OUT	R6032	4.7k	18k	4.7k	
	R6033	1.8k	18k	1.8k	
	C6032	○	X	○	
	C6032	○	○	X	
VIDEO OUT	Q6031	○	○	X	
DEMO PASS CON	C6051	10μ	10μ	10μ	
	C6502	0.01	0.01	0.01	

4.9 MAIN (FRONT), MINI FRONT, S-JACK AND ADV.JOG SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



LED (ONLY USED BY V14TYPE 7segLED)

	D7001	R7001 Q7006 Q7007	R7008
V14TYPE	NC	NC	Da
V15NEW	Da	D7	D6

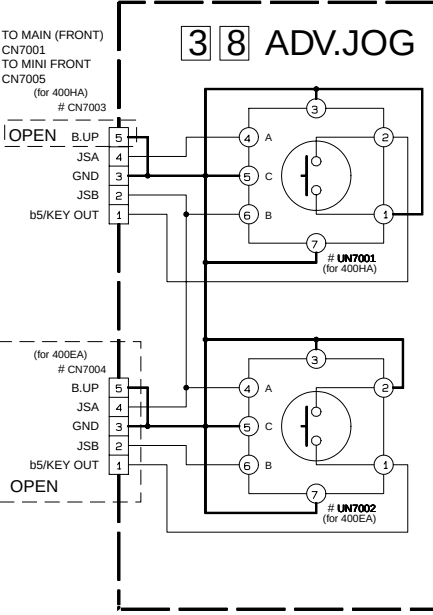
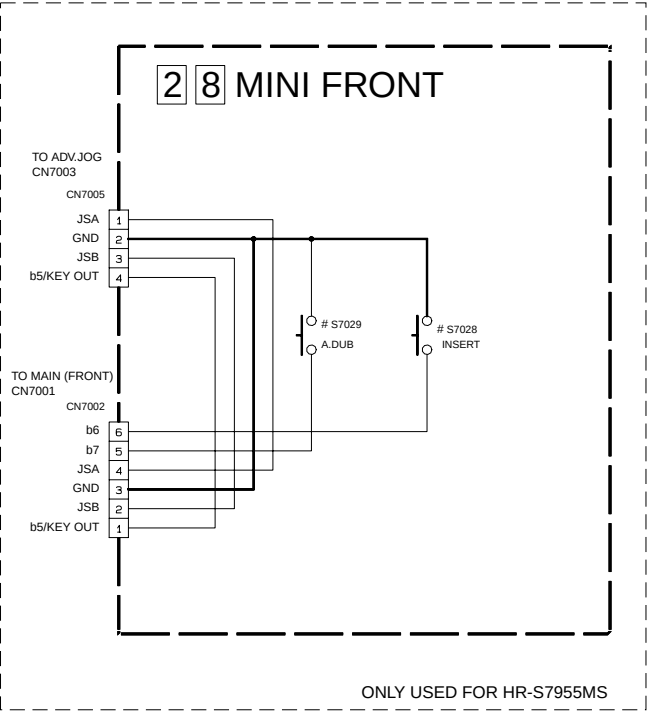
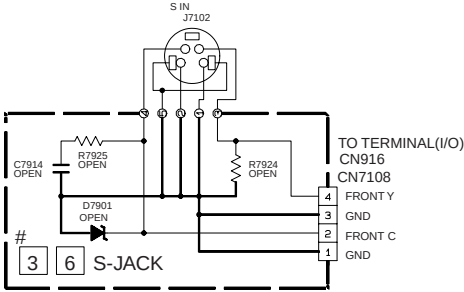
	R7009	R7010	Q7007	Q7015
D7001	USED	○	-	○
	NOT USED	×	-	×
D7002	USED	-	○	○
	NOT USED	-	×	×

○ : Used
× : Not used

TOOL	CN7001
400HA2	1-6
OTHERS	3-6

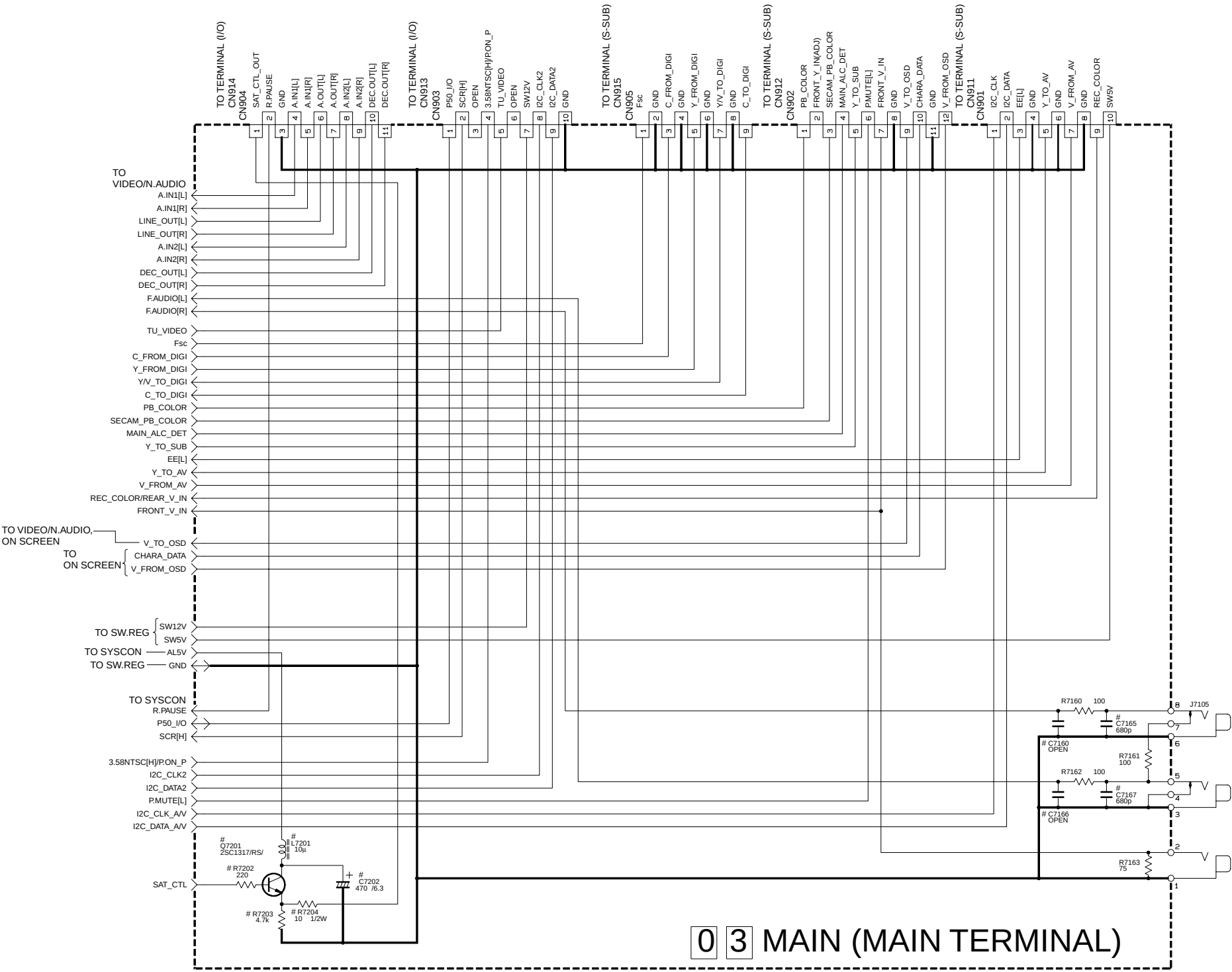
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

⊢ ELECTROLYTIC
⊢ CERAMIC
⊢ MYLER
⊢ NON POLAR



4.10 MAIN (MAIN TERMINAL) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



0 3 MAIN (MAIN TERMINAL)

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

- ELECTROLYTIC
- CERAMIC
- MYLER
- NON POLAR

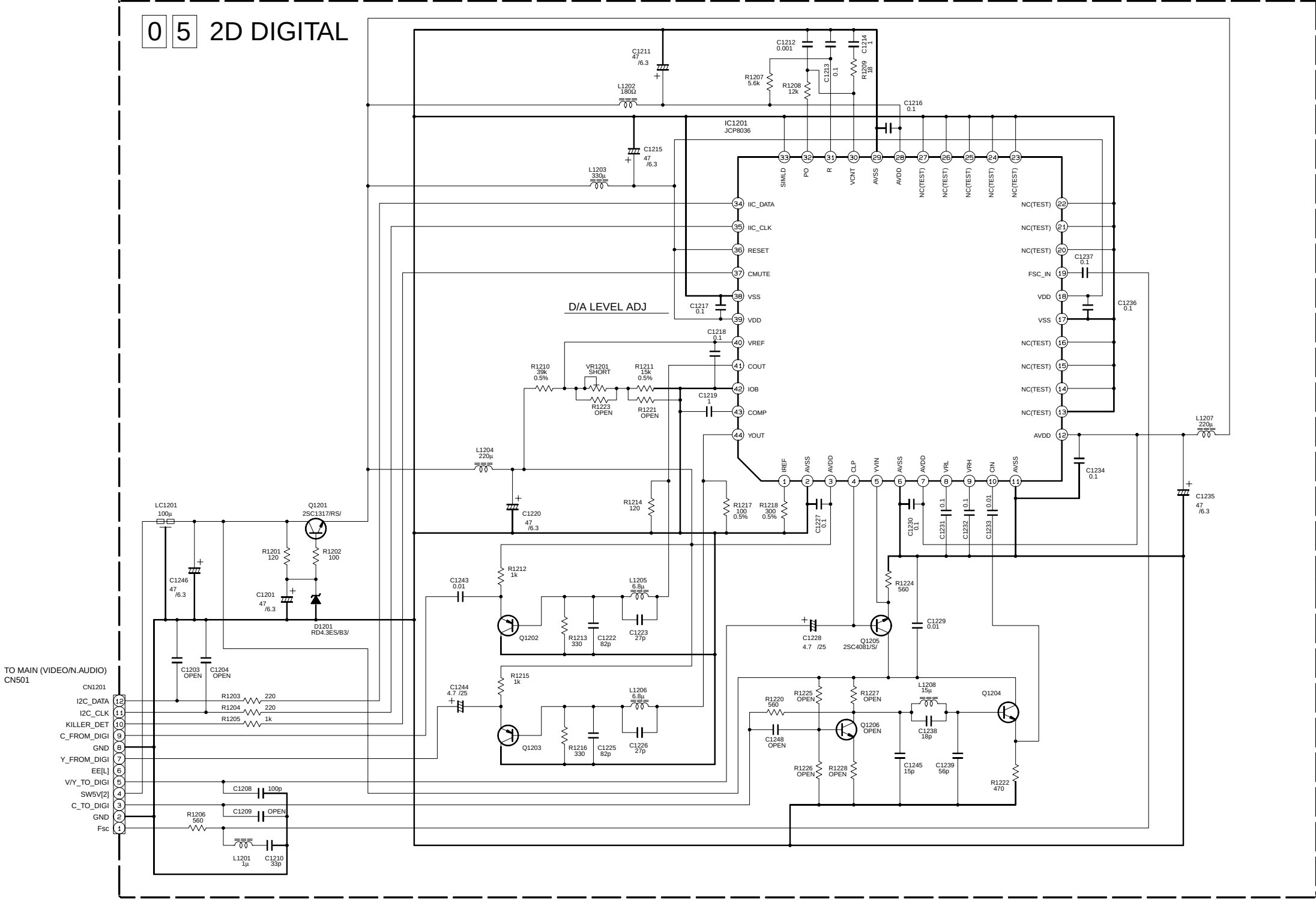
DIFFERENCE TABLE

	Q7201 R7202 R7203 R7204 C7202 L7201
SAT CTL	
YES	○
NO	×

○ : Used
× : Not used

	C7160 C7165 C7166 C7167
CE	
YES	○
NO	×

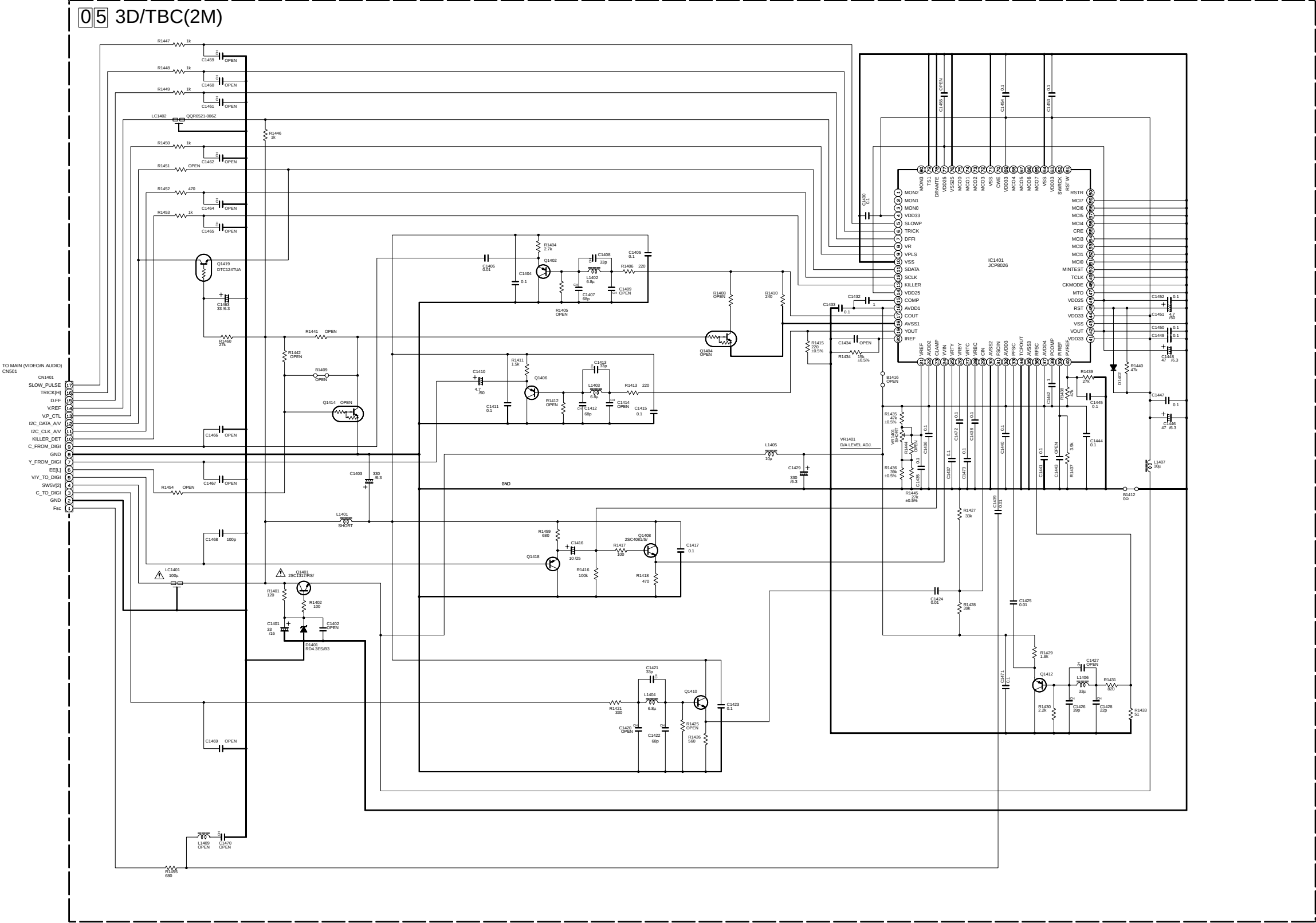
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



NOTES: UNLESS OTHERWISE SPECIFIED,
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QRI/.

⊕ — ELECTROLYTIC
— CERAMIC
— MYL
— N NON POLAR

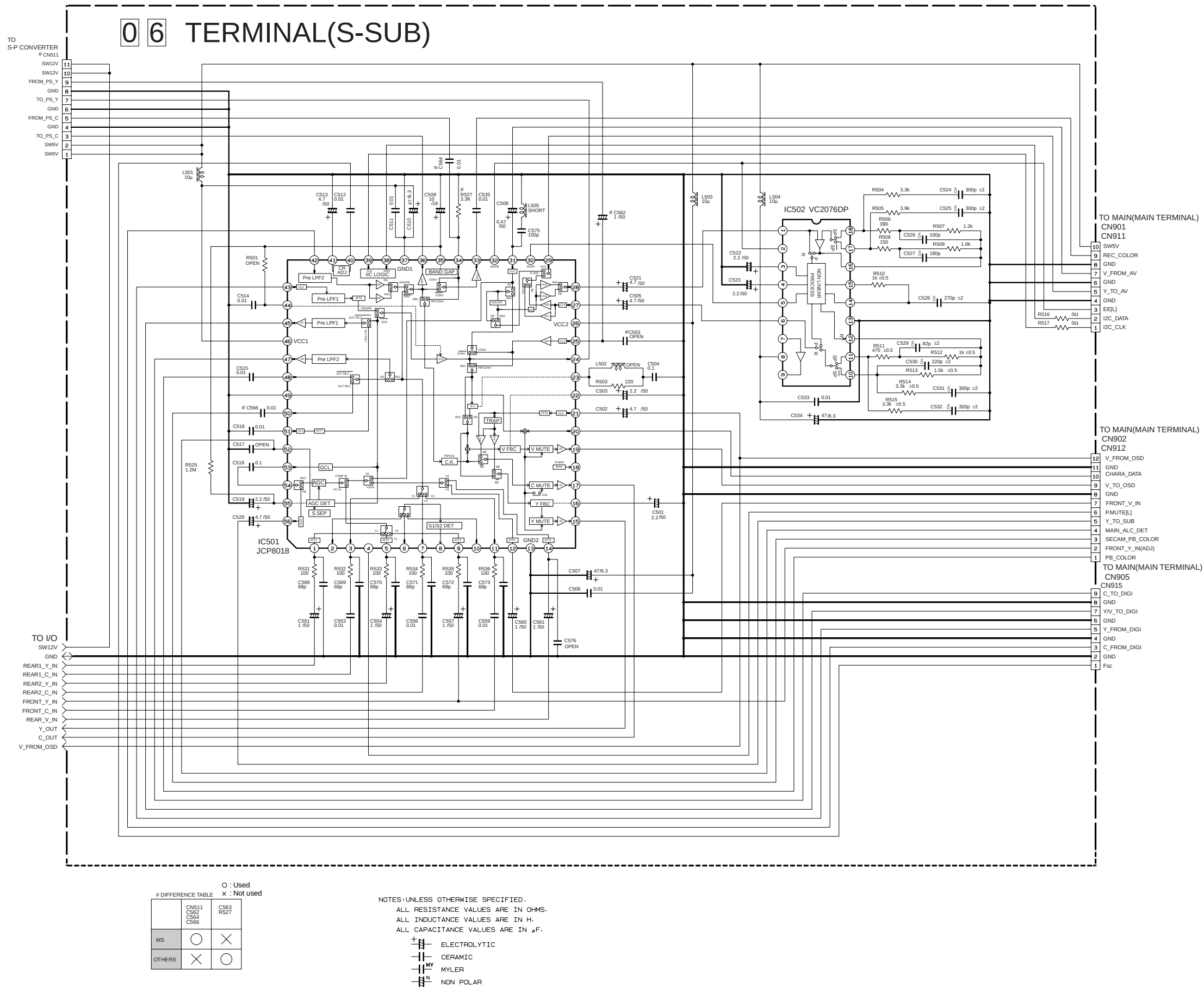
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



NOTES: UNLESS OTHERWISE SPECIFIED,
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR
ALL DIODES ARE 1SS133 OR 1N4148.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/Q/R/ OR 2PA1576R/
ALL NPN TYPE TRANSISTORS ARE 2SC4081/Q/R/S/ OR 2PC4081R/.

4.13 TERMINAL (S-SUB) SCHEMATIC DIAGRAM

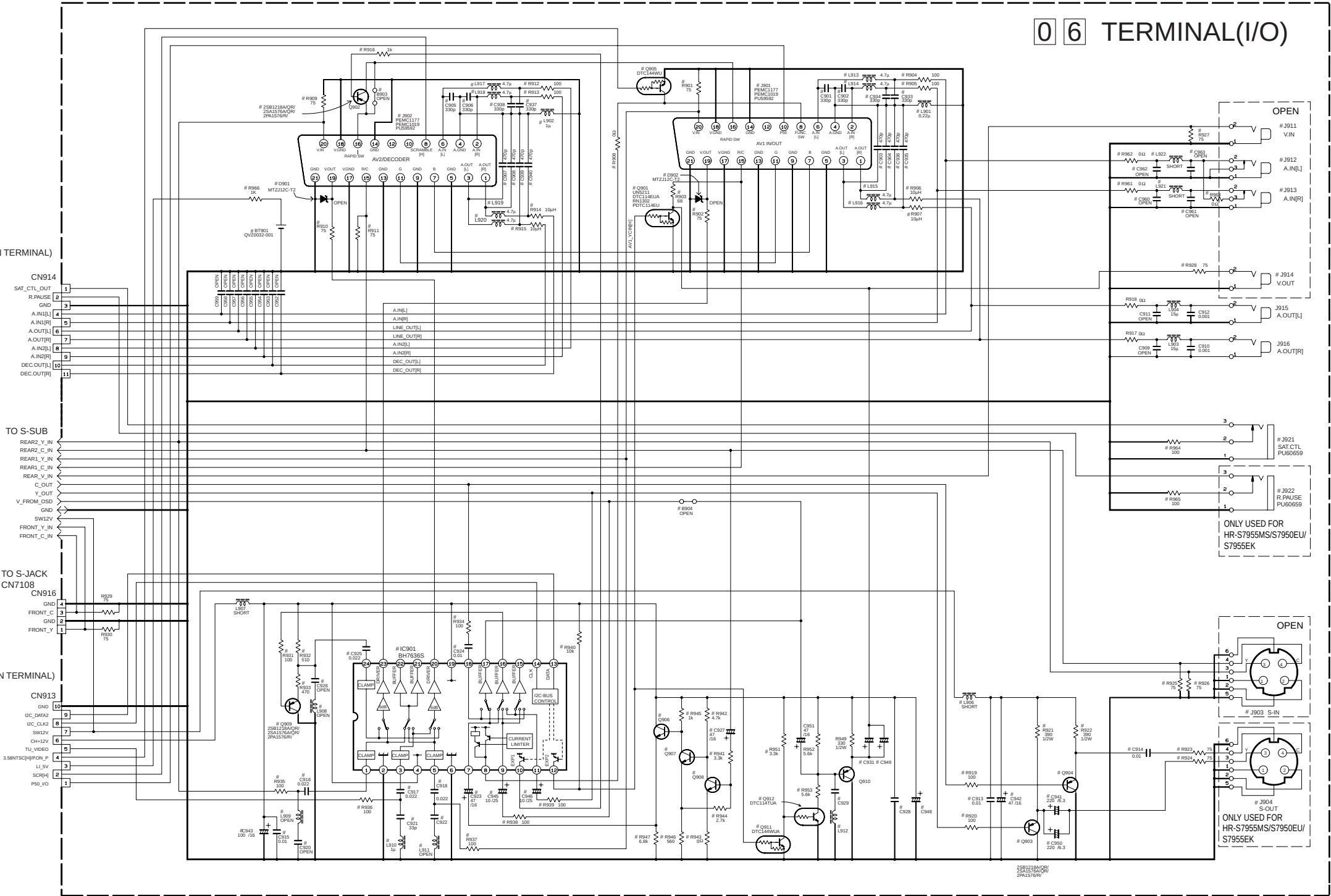
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



4.14 TERMINAL (I/O) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

0 6 TERMINAL(I/O)



○ : Used
× : Not used

# DIFFERENCE TABLE		CH+	REAR S-OUT	S-IN	REAR IN/OUT	SAT CTL	R.PAUSE	SW12VDECU				CEV-OUT DRIVER				BACK UP	
		R901-R908, R909-R916, R931-R947, R951-R953, L901-L902, L908-L911, L913-L916, L917-L920, IC901, B903-B904, D901-D902, J901-J902	C901-C904, C905-C908, C916-C918, C920-C927, C933-C936, C937-C940, C945-C946, C962, Q901-Q905, Q906-Q909, Q911-Q912	J904 R919-R924 R927-R928 C913-C914 C941-C942 Q903-Q904 L906	J903 R925-R926	J911-J914 R927-R928 R961-R963 L921-L922 C960-C963	J921 R964	J922 R965	C915	C943	C928	C948	C929	L912	C931	C949	R966 BT901
EURO MODELS	WITHOUT REAR S-OUT	○	×	×	×	○	×	0.01	100/16	0.01	OPEN	OPEN	OPEN	10/25	OPEN	×	
	WITH REAR S-OUT	○	○	×	×	○	○	0.01	100/16	0.01	OPEN	OPEN	OPEN	10/25	OPEN	×	
ARC MODELS		×	○	○	○	×	×	OPEN	OPEN	0.01	47/16	5.6k	SHORT	220/6.3	220/6.3	○	

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.
+ ELECTROLYTIC
- CERAMIC
- MY MYLER
- N NON POLAR

ALL NPN TYPE TRANSISTORS ARE 2SC4081/QR/ or 2SD1819A/QR/ or 2PC4081/R/
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/ or 2SB1218A/QR/ or 2PA1576/R/.

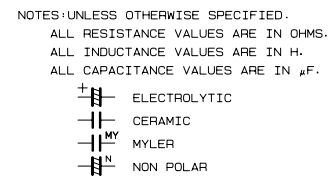
5

3

2

1

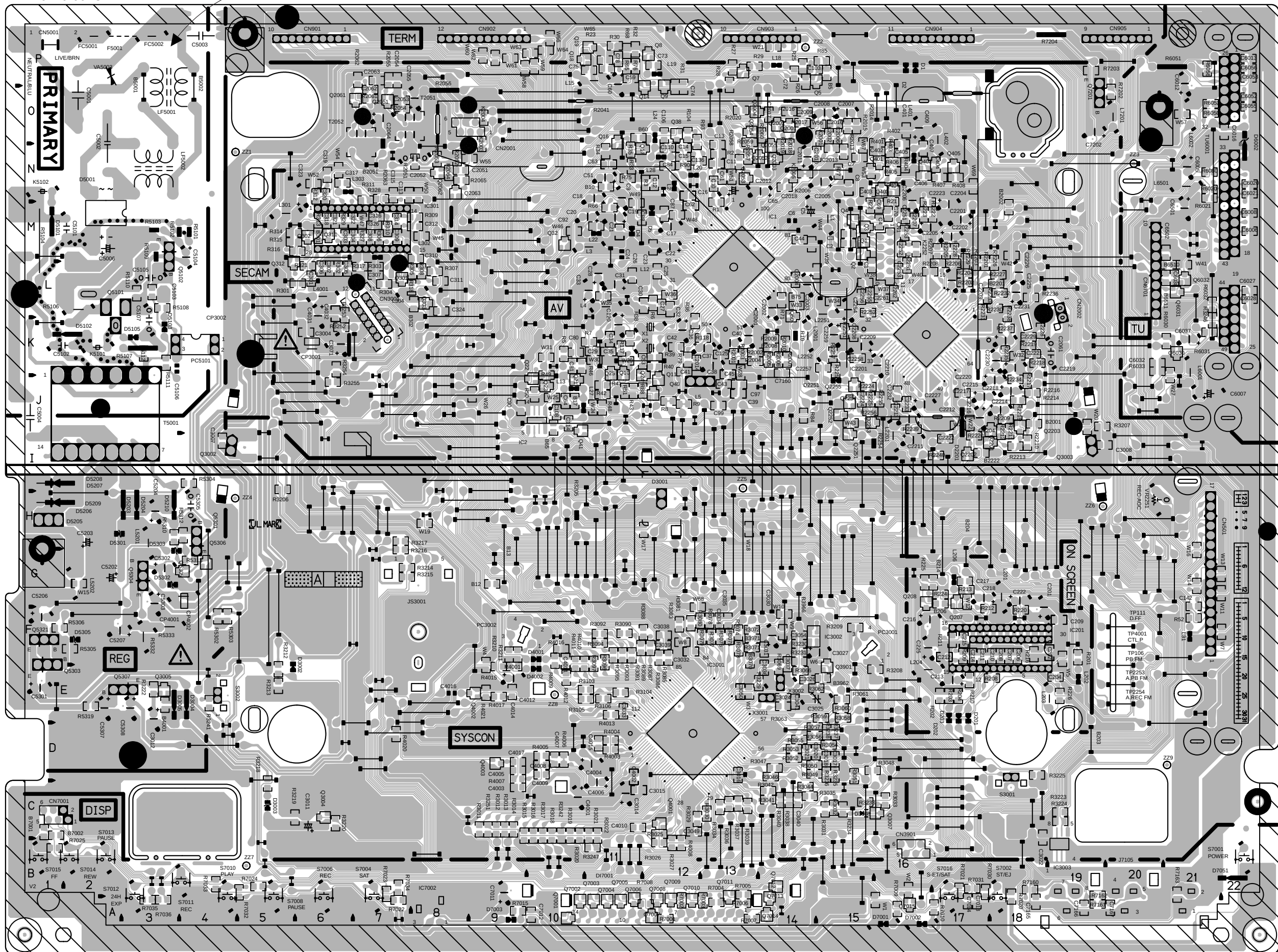
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



4.17 MAIN CIRCUIT BOARD

<03> MAIN
LPB10170-001C

DANGEROUS VOLTAGE

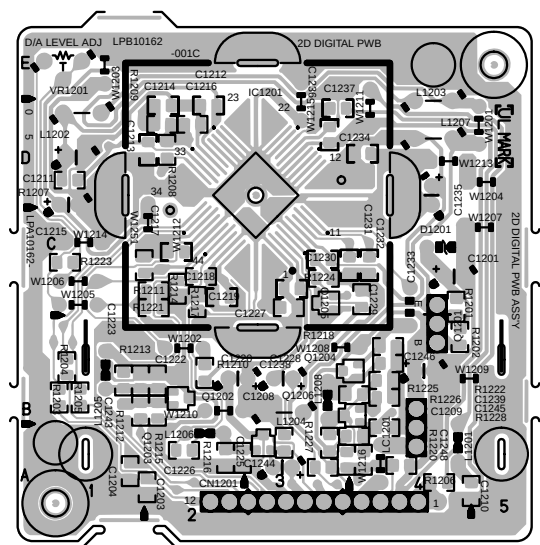


COMPONENT PARTS LOCATION GUIDE <MAIN> LPB10170-001C

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR		C309	B C 7M	C3022	B C 18C	CN7001	A D 2C	Q14	B C 120	R32	B C 11P	R2059	B C 130	R3074	B C 13F	R6031	B C 21K
C1	B C 15L	C310	B C 8M	C3024	B C 14E	DIODE		Q16	B C 110	R33	B C 11N	R2060	B C 140	R3075	B C 13F	R6032	B C 21L
C2	B C 15M	C311	B C 8L	C3025	A D 15E			Q17	B C 12N	R34	B C 11N	R2061	B C 70	R3076	B C 13F	R6033	B C 20K
C3	B C 15M	C312	B C 8M	C3026	B C 14E	D1	A D 16P	Q18	B C 10P	R35	B C 11N	R2062	B C 7P	R3077	B C 13F	R6050	B C 210
C4	B C 16M	C313	B C 7N	C3027	A D 14F	D2	A D 16P	Q19	B C 11P	R36	B C 12K	R2063	A D 70	R3078	B C 13F	R6051	A D 21P
C5	A D 14M	C314	B C 7M	C3030	A D 14F	D4	A D 11M	Q21	B C 10J	R38	B C 11K	R2064	B C 8N	R3079	B C 13F	R6052	B C 210
C6	A D 14M	C315	B C 7N	C3031	B C 14F	D5	A D 12N	Q22	B C 10J	R39	B C 12K	R2065	B C 8N	R3080	B C 13F	R6056	B C 21P
C7	B C 15N	C316	B C 7M	C3032	B C 12F	D201	A D 17E	Q23	B C 10J	R40	B C 12K	R2201	B C 17L	R3081	B C 12F	R6080	B C 21N
C8	B C 15N	C317	B C 6N	C3033	B C 11E	D202	A D 17E	Q24	B C 12K	R41	B C 11J	R2202	B C 17L	R3083	B C 12F	R7001	B C 12A
C9	A D 11M	C318	B C 6M	C3034	B C 13F	D2201	A D 17I	Q25	B C 11K	R42	B C 11J	R2203	B C 17L	R3085	B C 12F	R7002	B C 12A
C10	B C 13N	C319	B C 6N	C3035	B C 13F	D2251	A D 15J	Q32	B C 10M	R43	B C 11J	R2204	B C 17L	R3086	B C 12F	R7003	B C 13A
C11	B C 13N	C320	B C 6N	C3036	B C 14E	D3001	A D 12H	Q38	B C 120	R46	B C 10K	R2205	B C 17M	R3087	B C 12F	R7004	B C 13A
C12	B C 12N	C321	B C 6M	C3037	B C 14F	D3002	A D 5E	Q40	B C 12J	R48	B C 11J	R2206	B C 17L	R3088	B C 12F	R7005	B C 13B
C13	B C 13N	C322	B C 7M	C3038	B C 12F	D3003	A D 5C	Q41	B C 10J	R49	B C 10K	R2207	B C 17M	R3089	B C 11F	R7006	B C 13A
C14	B C 12N	C323	A D 6N	C3039	B C 12F	D3004	A D 4E	Q50	B C 14L	R50	B C 10J	R2208	B C 17L	R3090	B C 11F	R7007	B C 13A
C15	B C 12N	C324	B C 8L	C3040	B C 14C	D3005	A D 3E	Q207	B C 17G	R51	B C 11J	R2209	B C 18J	R3091	B C 11F	R7008	B C 12A
C16	B C 12N	C401	B C 160	C3041	B C 14E	D3008	B C 15C	Q208	B C 16G	R52	B C 21G	R2210	B C 18J	R3092	B C 11F	R7009	B C 16A
C17	A D 12M	C402	B C 16N	C3049	B C 12C	D4001	A D 10F	Q301	B C 7L	R65	B C 11P	R2211	B C 18J	R3093	B C 11F	R7010	B C 17A
C18	A D 11N	C403	B C 15N	C3050	B C 13E	D4002	A D 10E	Q302	B C 6M	R66	B C 11M	R2212	B C 18J	R3094	B C 11F	R7015	B C 9A
C19	A D 11M	C404	B C 17N	C3054	B C 14F	D5001	B C 2M	Q303	B C 8L	R68	B C 11P	R2213	B C 18J	R3095	B C 11F	R7020	B C 18A
C20	A D 11M	C405	B C 16N	C3071	A D 6K	D5101	B C 2M	Q311	B C 6M	R71	B C 14L	R2214	B C 18J	R3096	B C 11F	R7021	B C 17B
C21	B C 11M	C406	B C 16N	C4001	A D 10C	D5102	A D 2K	Q312	B C 5L	R75	B C 11N	R2215	B C 18J	R3097	B C 11F	R7022	B C 7A
C22	A D 12M	C407	B C 16N	C4002	B C 11D	D5103	A D 3K	Q401	B C 16N	R76	B C 11P	R2216	B C 18J	R3103	B C 11E	R7023	B C 7B
C23	B C 12M	C409	A D 160	C4003	B C 9C	D5105	A D 3K	Q402	B C 16N	R77	B C 15N	R2217	B C 18J	R3104	B C 11E	R7024	B C 5B
C24	A D 11L	C2001	A D 13K	C4004	A D 11D	D5203	A D 3I	Q403	B C 16N	R79	B C 12K	R2218	B C 18K	R3105	B C 11E	R7025	B C 1B
C25	B C 12L	C2002	A D 14L	C4005	B C 9D	D5204	A D 3I	Q404	B C 16N	R84	B C 14J	R2219	B C 18K	R3106	B C 11E	R7030	B C 17B
C26	B C 11L	C2003	A D 14L	C4006	A D 11C	D5205	A D 1H	Q405	B C 17N	R85	B C 15P	R2220	B C 17I	R3205	A D 10H	R7031	B C 17B
C27	B C 12L	C2004	B C 14L	C4007	B C 10D	D5206	A D 2H	Q2001	B C 140	R88	B C 12J	R2222	B C 17M	R3206	B C 5I	R7032	B C 5B
C28	A D 11L	C2005	A D 15N	C4008	B C 10D	D5207	A D 2I	Q2002	B C 140	R90	B C 12N	R2223	B C 16M	R3207	B C 19J	R7033	B C 4B
C29	B C 11K	C2006	B C 150	C4009	B C 10D	D5208	A D 2I	Q2003	B C 14N	R93	B C 120	R2224	B C 15J	R3208	B C 16E	R7034	B C 7B
C30	B C 12L	C2007	A D 150	C4010	B C 11C	D5209	A D 2H	Q2004	B C 130	R104	B C 120	R2225	B C 15J	R3209	B C 15F	R7035	B C 3A
C31	A D 11L	C2008	A D 150	C4011	B C 10F	D5210	A D 3I	Q2051	B C 70	R117	B C 11K	R2226	B C 18L	R3210	B C 9F	R7036	B C 3A
C32	B C 12L	C2009	B C 140	C4012	A D 9E	D5301	A D 2H	Q2052	B C 14N	R118	B C 13K	R2227	B C 18L	R3211	B C 9F	R7160	B C 18B
C33	A D 11L	C2010	B C 15N	C4014	B C 9E	D5302	A D 4G	Q2053	B C 13N	R201	B C 19F	R2228	B C 17M	R3212	B C 5E	R7161	B C 19A
C34	B C 11K	C2011	A D 14N	C4015	B C 11D	D5303	A D 4G	Q2054	B C 130	R202	B C 17E	R2229	B C 17L	R3213	B C 5E	R7162	B C 19B
C35	B C 11K	C2012	A D 13N	C4016	A D 8E	D5305	A D 2F	Q2055	B C 14N	R203	B C 17E	R2230	B C 18L	R3214	B C 7G	R7163	B C 21B
C36	A D 12K	C2013	B C 15N	C4017	B C 9D	D6002	A D 22N	Q2061	B C 70	R204	B C 17E	R2231	B C 17L	R3215	B C 7G	R7202	B C 200
C37	A D 12K	C2014	B C 12K	C4031	A D 6L	D7001	A D 16A	Q2062	B C 8N	R208	B C 18E	R2232	B C 18L	R3216	B C 7G	R7203	B C 19P
C38	A D 13K	C2016	B C 150	C4032	B C 6L	D7002	A D 16A	Q2063	B C 8N	R209	B C 17F	R2233	B C 17L	R3217	B C 7H	R7204	A D 19P
C39	B C 13J	C2017	B C 140	C5001	A D 2P	D7003	A D 9A	Q2201	B C 18I	R210	B C 17E	R2234	B C 18J	R3218	B C 5C	SWITCH	
C40	A D 13K	C2018	B C 14N	C5002	A D 2N	D7051	A D 22B	Q2202	B C 17I	R211	B C 17F	R2235	B C 18K	R3219	B C 6C		S3001
C41	B C 12K	C2051	B C 8N	C5003	A D 4P	JACK		Q2203	B C 18J	R212	B C 17F	R2236	B C 18L	R3220	B C 6C	S3002	A D 4E
C42	B C 12K	C2052	A D 7N	C5004	A D 1J			Q2204	B C 18J	R213	B C 17G	R2237	B C 18K	R3222	B C 3E	S7001	A D 22B
C43	B C 13J	C2053	B C 70	C5006	A D 2M	IC1	B C 13L	Q2251	B C 15I	R216	B C 18F	R2238	B C 18L	R3223	B C 19C	S7002	A D 18B
C44	B C 14M	C2054	B C 7P	C5101	A D 2M	IC2	B C 10J	Q2252	B C 15J	R220	B C 18F	R2239	B C 16J	R3224	B C 19C	S7004	A D 7B
C45	B C 13K	C2055	A D 80	C5102	A D 1K	IC201	A D 19E	Q2253	B C 15J	R224	B C 17G	R2240	B C 17I	R3225	B C 18D	S7006	A D 6B
C51	A D 11N	C2061	A D 19K	C5103	B C 3L	IC301	A D 6M	Q2254	B C 15J	R225	B C 16G	R2251	B C 15K	R3229	B C 14F	S7008	A D 5B
C53	B C 12K	C2062	B C 70	C5104	A D 4M	IC2201	B C 16K	Q2255	B C 15J	R226	B C 19E	R2252	B C 15L	R3230	B C 14E	S7010	A D 4B
C59	B C 11P	C2063	B C 7P	C5105	A D 3L	IC3001	B C 12D	Q3002	A D 5I	R301	B C 6L	R2253	B C 15K	R3231	B C 14F	S7011	A D 4B
C60	A D 11P	C2064	A D 70	C5106	A D 4J	IC3002	B C 14F	Q3003	A D 19I	R302	B C 6L	R2254	A D 16I	R3233	B C 15C	S7012	A D 3B
C61	B C 13N	C2201	A D 17M	C5107	A D 3L	IC3003	B C 19B	Q3004	B C 6C	R303	B C 7L	R2255	B C 16J	R3234	B C 15C	S7013	A D 2B
C62	B C 12M	C2202	A D 17M	C5202	A D 2G	IC7002	A D 8A	Q3005	B C 3E	R304	B C 7L	R2256	B C 15J	R3235	B C 15D	S7014	A D 2B
C63	B C 11N	C2203	A D 17L	C5203	A D 2H	COIL		Q3007	B C 16C	R305	B C 8L	R2257	B C 15K	R3236	B C 15D	S7015	A D 1B
C64	B C 10J	C2204	A D 17M	C5204	A D 3H	J7105	A D 20A	Q3901	B C 15E	R306	B C 7M	R3011	B C 9C	R3237	B C 15D	S7016	A D 17B
C65	A D 14N	C2205	A D 16M	C5206	A D 1F		Q4001	B C 12C	R307	B C 8L	R3012	B C 9C	R3238	B C 15D	TESTPOINT		
C69	B C 16M	C2206	A D 16M	C5207	A D 3F	L1	A D 15M	Q4002	B C 9E	R308	B C 8L	R3013	B C 9C	R3241		B C 4E	TP106
C70	B C 16M	C2207	B C 16M	C5301	A D 1E	L2	A D 12N	Q4003	B C 9D	R309	B C 8M	R3014	B C 9C	R3242	B C 10C	TP111	A D 19F
C72	B C 14P	C2208	B C 15K	C5302	A D 3G	L3	A D 10M	Q5101	A D 2L	R310	B C 7M	R3015	B C 9C	R3246	B C 21K	TP2253	A D 19E
C73	B C 12P	C2209	A D 15K	C5303	A D 3G	L4	A D 11L	Q5102	A D 3M	R311	B C 7N	R3016	B C 10C	R3247	B C 11B	TP2254	A D 19E
C74	B C 120	C2210	A D 16K	C5305	A D 4H	L5	A D 13J	Q5301	A D 4F	R312	B C 6N	R3017	B C 10C	R3251	B C 9C	TP2901	B C 14D
C75	B C 11P	C2211	A D 16I	C5307	A D 2E	L12	A D 12L	Q5303	A D 1F	R313	B C 6M	R3018	B C 10C	R3252	B C 6K	TP3902	B C 13D
C78	B C 11P	C2212	A D 16J	C5308	A D 3E	L13	A D 10J	Q5304	A D 3G	R314	B C 5M	R3019	B C 10C	R3253	B C 6L	TP3903	B C 15E
C80	B C 10K	C2213	B C 16J	C6005	A D 21N	L15	A D 11P	Q5305	B C 4G	R315	B C 5M	R3020	B C 10C	R3254	B C 6J	TP3904	B C 13E
C81	B C 10K	C2214	A D 18J	C6006	B C 22M	L18	A D 14P	Q5306	B C 4G	R316	B C 6M	R3021	B C 11C	R3255	B C 6K	TP3905	B C 14E
C84	B C 12N	C2215	A D 17J	C6007	A D 21J	L19	A D 12P	Q5307	A D 3E	R317	B C 7L	R3022	B C 11C	R4001	B C 9E	TP3906	B C 14D
C87	B C 12M	C2216	A D 17J	C6008	B C 22M	L20	A D 12N	Q5321	A D 1F	R318	B C 8L	R3023	B C 12C	R4003	B C 11D	TP3907	B C 14D
C88	B C 11M	C2217	B C 17J	C6012	A D 21O	L22	A D 11M	Q6030	B C 21K	R321	B C 6L	R3026	B C 12B	R4004	B C 11D	TP4001	A D 20F
C90	B C 9J	C2218	A D 18J	C6013	B C 22P	L24	A D 120	Q6031	B C 21L	R326	B C 7M	R3027	B C 12B	R4005	B C 10D		
C92	B C 11M	C2219	A D 18K	C6016	B C 22O	L27	A D 10J	Q6032	B C 21L	R327	B C 7M	R3029	B C 12C	R4006	B C 10D		
C97	B C 13J	C2220	A D 18J	C6020	B C 22N	L28	A D 12N	Q7001	B C 10A	R328	B C 7N	R3030	B C 13C	R4007	B C 9D		
C99	B C 13J	C2221	B C 18K	C6021	B C 22N	L31	A D 21F	Q7002	B C 10A	R329	B C 6M	R3031	B C 15C	R4008	B C 12B		
C103	B C 14P	C2222	B C 17I	C6027	B C 22L	L32	A D 21F</										

4.18 2D DIGITAL AND 3D DIGITAL/2M CIRCUIT BOARDS

<05> 2D DIGITAL LPB10162-001C

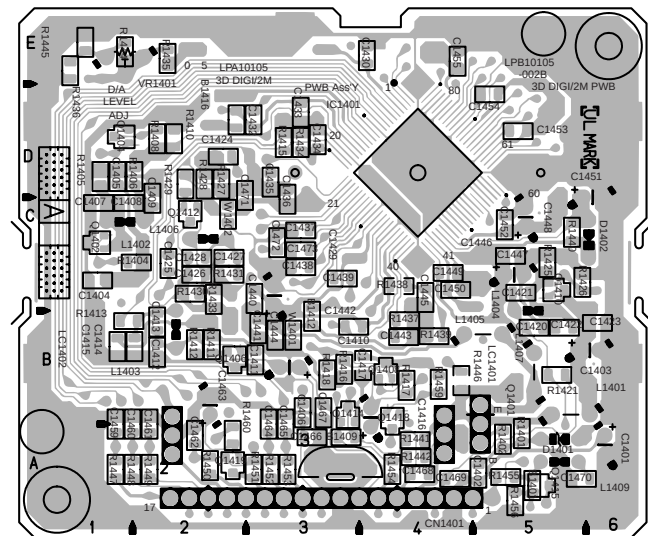


COMPONENT PARTS LOCATION GUIDE <2D DIGITAL> LPB10162-001C

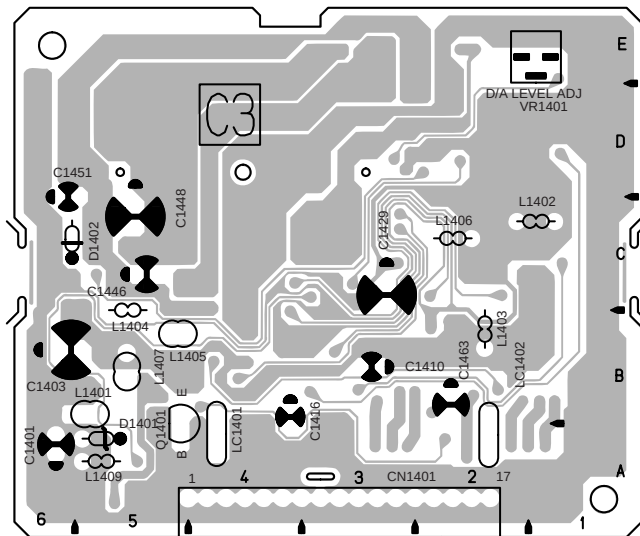
REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR				TRANSISTOR			
C1201	A D 4C	C1231	B C 3C	L1203	A D 4D	R1211	B C 2C
C1203	B C 2A	C1232	B C 4C	L1204	A D 3B	R1212	B C 2B
C1204	B C 1A	C1233	A D 4C	L1205	A D 1B	R1213	B C 2B
C1208	B C 3A	C1234	B C 4D	L1206	A D 2A	R1214	B C 2C
C1209	B C 4A	C1235	A D 4D	L1207	A D 4D	R1215	B C 3A
C1210	B C 5A	C1236	B C 3D	L1208	A D 3B	R1216	B C 2A
C1211	A D 1D	C1237	B C 3D	RESISTOR			
C1212	B C 2D	C1238	B C 3B	Q1201	A D 4C	R1217	B C 2C
C1213	B C 2D	C1239	B C 4B	Q1202	B C 2B	R1218	B C 3C
C1214	B C 2D	C1243	B C 2B	Q1203	B C 3A	R1220	B C 3A
C1215	A D 1C	C1244	A D 3A	Q1204	B C 3B	R1221	B C 2C
C1216	B C 2D	C1245	B C 4B	Q1205	B C 3C	R1222	B C 4B
C1217	B C 2C	C1246	A D 4B	Q1206	B C 3B	R1223	B C 1C
C1218	B C 2C	C1248	B C 4A	OTHER			
C1219	B C 2C	CONNECTOR				R1224	B C 3C
C1220	A D 3B	CN1201	A D 4A	R1201	B C 4C	R1225	B C 3A
C1222	B C 2B	DIODE		R1202	B C 4B	R1226	B C 4B
C1223	B C 1B	D1201	A D 4C	R1203	B C 1B	R1227	B C 3A
C1225	B C 2A	IC		R1204	B C 1B	R1228	B C 4B
C1226	B C 2A	IC1201	B C 3D	R1205	B C 1B		
C1227	B C 3C	COIL		R1206	B C 4A		
C1228	A D 3B	L1201	A D 4B	R1207	B C 1D		
C1229	B C 4C	L1202	A D 1D	R1208	B C 2D		
C1230	B C 3C			R1209	B C 2D		
				R1210	B C 2B		

<05> 3D DIGITAL/2M LPB10105-002B

- FOIL SIDE (B) -



- COMPONENT SIDE (A) -



COMPONENT PARTS LOCATION GUIDE <3D DIGITAL/2M> LPB10105-002B

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR				IC				RESISTOR				OTHER	
C1401	A D 6A	C1427	B C 2C	C1453	B C 5D	IC1401	B C 4D	Q1418	B C 4B	R1431	B C 2C	R1460	B C 2A
C1402	B C 5A	C1428	B C 2C	C1454	B C 5D			Q1419	B C 2A	R1433	B C 2C		
C1403	A D 6B	C1429	A D 3C	C1455	B C 4E	COIL				R1434	B C 3D		
C1404	B C 1C	C1430	B C 4E	C1459	B C 1B	L1401	A D 5B	R1401	B C 5A	R1435	B C 2E		
C1405	B C 1D	C1431	B C 3D	C1460	B C 2B	L1402	A D 2C	R1402	B C 5A	R1436	B C 1E		
C1406	B C 3B	C1432	B C 3D	C1461	B C 2B	L1403	A D 2B	R1404	B C 2C	R1437	B C 4B		
C1407	B C 1C	C1433	B C 3D	C1462	B C 2A	L1404	A D 5C	R1405	B C 1D	R1438	B C 4C		
C1408	B C 2C	C1434	B C 3D	C1463	A D 2B	L1405	A D 4B	R1406	B C 2D	R1439	B C 4B		
C1409	B C 2C	C1435	B C 3D	C1464	B C 3B	L1406	A D 2C	R1407	B C 2D	R1440	B C 5C		
C1410	A D 3B	C1436	B C 3C	C1465	B C 3B	L1407	A D 5B	R1408	B C 2D	R1441	B C 4A		
C1411	B C 3B	C1437	B C 3C	C1466	B C 3A	L1408	A D 5A	R1410	B C 2D	R1442	B C 4A		
C1412	B C 2B	C1438	B C 3C	C1467	B C 3B	L1409	A D 5A	R1411	B C 2D	R1443	B C 2E		
C1413	B C 2B	C1439	B C 3C	C1468	B C 4A	LC1401	A D 4A	R1412	B C 2B	R1444	B C 1E		
C1414	B C 2B	C1440	B C 3C	C1469	B C 4A	LC1402	A D 2A	R1413	B C 2B	R1445	B C 4B		
C1415	B C 1B	C1441	B C 3B	C1470	B C 6A	TRANSISTOR				R1446	B C 4B		
C1416	A D 4A	C1442	B C 4B	C1471	B C 3D	Q1401	A D 5B	R1415	B C 3D	R1447	B C 1A		
C1417	B C 4B	C1443	B C 4B	C1472	B C 3C	Q1402	B C 1C	R1416	B C 3B	R1448	B C 2A		
C1420	B C 5B	C1444	B C 3B	C1473	B C 3C	Q1404	B C 1D	R1417	B C 4B	R1449	B C 2A		
C1421	B C 5C	C1445	B C 4C	CONNECTOR				R1418	B C 3B	R1450	B C 2A		
C1422	B C 5B	C1446	A D 5C	CN1401	A D 5A	Q1406	B C 2B	R1421	B C 5B	R1451	B C 3A		
C1423	B C 6B	C1447	A D 5C			Q1408	B C 4B	R1425	B C 5C	R1452	B C 3A		
C1424	B C 2D	C1448	A D 5C	DIODE				R1426	B C 6C	R1453	B C 3A		
C1425	B C 2C	C1449	B C 4C	D1401	A D 6A	Q1410	B C 5C	R1427	B C 2D	R1454	B C 4A		
C1426	B C 2C	C1450	B C 4C	D1402	A D 6C	Q1412	B C 2C	R1428	B C 2D	R1455	B C 5A		
		C1451	A D 6D			Q1414	B C 3B	R1429	B C 2D	R1456	B C 5A		
		C1452	B C 5C			Q1415	B C 5A	R1430	B C 2C	R1459	B C 4B		

4.20 S-P CONVERTER CIRCUIT BOARD [HR-S6955MS/S7955MS]

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR		C1520	A D 3A	R1509	A D 3B
C1501	A D 4C	C1521	A D 2C	R1510	A D 4B
C1502	A D 3D	CONNECTOR		R1511	A D 3A
C1503	A D 4D	CN1501	A D 3A	R1514	A D 2B
C1504	A D 4C	IC		R1515	A D 2C
C1505	A D 3D	IC1501	B C 2C	R1517	A D 2C
C1506	A D 3C	TRANSISTOR			
C1507	A D 2C	Q1501	A D 3B		
C1508	A D 1D	Q1502	A D 3B		
C1509	A D 2C	RESISTOR			
C1510	A D 1B	R1501	A D 4C		
C1511	A D 1A	R1502	A D 2C		
C1512	A D 2A	R1503	A D 2C		
C1513	A D 2B	R1504	A D 2B		
C1514	A D 2A	R1505	A D 2B		
C1515	A D 3B	R1506	A D 2B		
C1516	A D 3C	R1507	A D 2B		
C1517	A D 3B	R1508	A D 3B		
C1518	A D 3A				
C1519	A D 3B				

The image shows a top-down view of a printed circuit board (PCB) layout. The board is rectangular with a complex network of traces and vias. Key components and labels include:

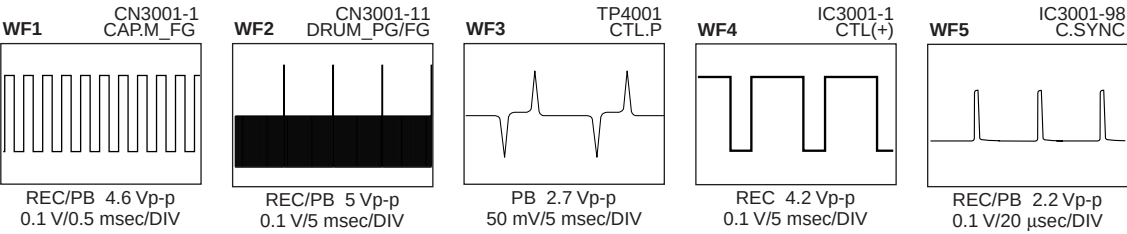
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C503	A	D	14B	C956	B	C	5A	R901	B	C	8D
C504	B	C	15C	C957	B	C	5A	R902	B	C	7C
C505	A	D	15C	C958	B	C	4A	R903	A	D	7D
C506	B	C	15C	C959	B	C	4A	R904	B	C	4D
C507	A	D	15C	C960	B	C	2B	R905	B	C	4D
C508	A	D	15D	C961	B	C	1B	R906	A	D	4C
C509	A	D	14E	C962	B	C	1C	R907	A	D	4C
C510	A	D	13D	C963	B	C	1C	R908	B	C	7B
C511	B	C	13D	CONNECTOR				R909	B	C	7B
C512	B	C	14E	CN511	A	D	15E	R910	B	C	7A
C513	A	D	14D	CN911	A	D	15A	R911	B	C	7A
C514	B	C	13D	CN912	A	D	12A	R912	B	C	4B
C515	B	C	12D	CN913	A	D	7A	R913	B	C	4B
C516	B	C	13D	CN914	A	D	4A	R914	A	D	5A
C517	B	C	12D	CN915	A	D	1A	R915	A	D	6A
C518	B	C	13D	CN916	A	D	10E	R916	B	C	7C
C519	A	D	12D	DIODE				R917	B	C	3B
C520	A	D	13D	D901	A	D	8A	R918	B	C	3B
C521	A	D	16C	D902	A	D	7C	R919	A	D	11B
C522	A	D	16C	IC				R920	A	D	11B
C523	A	D	16B	IC501	B	C	14C	R921	A	D	11E
C524	B	C	14A	IC502	A	D	15B	R922	A	D	11D
C525	B	C	14A	IC901	A	D	9B	R923	B	C	11D
C526	B	C	15B	JACK				R924	B	C	10C
C527	B	C	15B	J901	A	D	6C	R925	B	C	9D
C528	B	C	15B	J902	A	D	6B	R926	B	C	9C
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C531	B	C	15A	J911	A	D	2D	R929	B	C	11E
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C535	B	C	14D	J915	A	D	3C	R933	B	C	9A
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C553	A	D	12C	J921	A	D	4C	R935	A	D	9B
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C561	A	D	13B	L504	A	D	16D	R941	B	C	9E
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C568	B	C	12C	L904	A	D	2B	R946	B	C	10E
C569	B	C	12C	L906	A	D	12E	R947	B	C	10E
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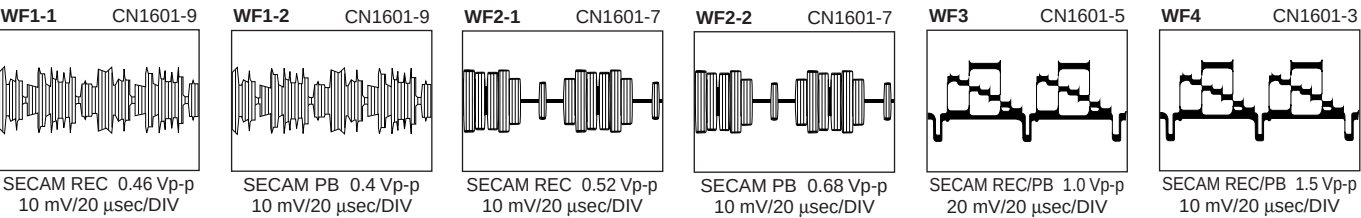
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C1606	B	C	9C	C1640	A	D	3B	C1660	B	C	9B	IC1607	B	C	4C	Q1611	B	C	3C	R1612	B	C	9D	R1640	B	C	3C	R1660	B	C	5D
C1607	B	C	9C	C1641	B	C	3C	C1661	B	C	9B	IC1608	B	C	9B	Q1612	B	C	2D	R1615	B	C	9C	R1641	B	C	2D	R1661	B	C	5D
C1608	A	D	9B	C1642	B	C	2C	C1662	B	C	5D	COIL				Q1613	B	C	5D	R1616	B	C	9C	R1642	B	C	2D	R1662	B	C	8A
C1609	B	C	10C	C1643	B	C	2C	C1663	B	C	8B	L1601	A	D	7E	Q1614	B	C	5C	R1617	B	C	10C	R1643	B	C	3C	R1663	B	C	8B
C1610	A	D	10C	C1644	B	C	6D	C1664	B	C	8B	L1602	A	D	8A	Q1615	B	C	5D	R1618	B	C	10C	R1644	B	C	3D	R1664	B	C	8B
C1611	B	C	9D	C1645	A	D	4B	CONNECTOR				L1603	A	D	5E	Q1616	B	C	5C	R1619	B	C	10D	R1645	B	C	5C	VR1601	A	D	3D
C1612	B	C	6B	C1646	A	D	4C	CN1601	A	D	7F	L1604	A	D	3B	Q1617	B	C	5D	R1620	B	C	9C	R1646	B	C	5D	VR1602	A	D	3D
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C1614	B	C	7C	C1648	A	D	5B	CN1603	A	D	4F	TRANSISTOR				RESISTOR				R1622	A	D	7C	R1648	B	C	5C	OTHER			
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4.22 WAVEFORMS

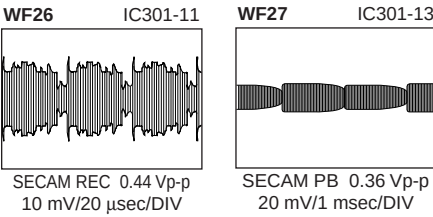
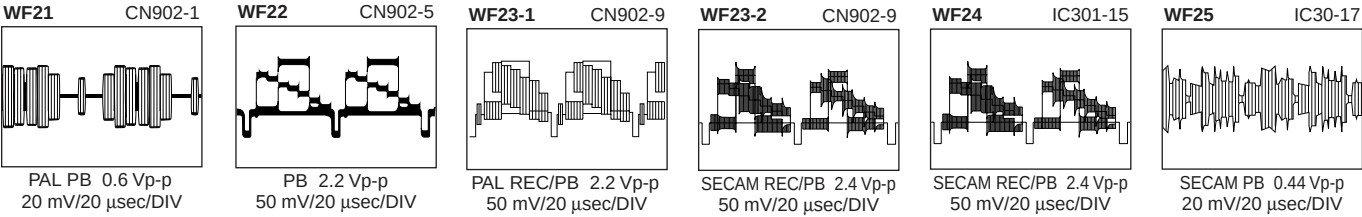
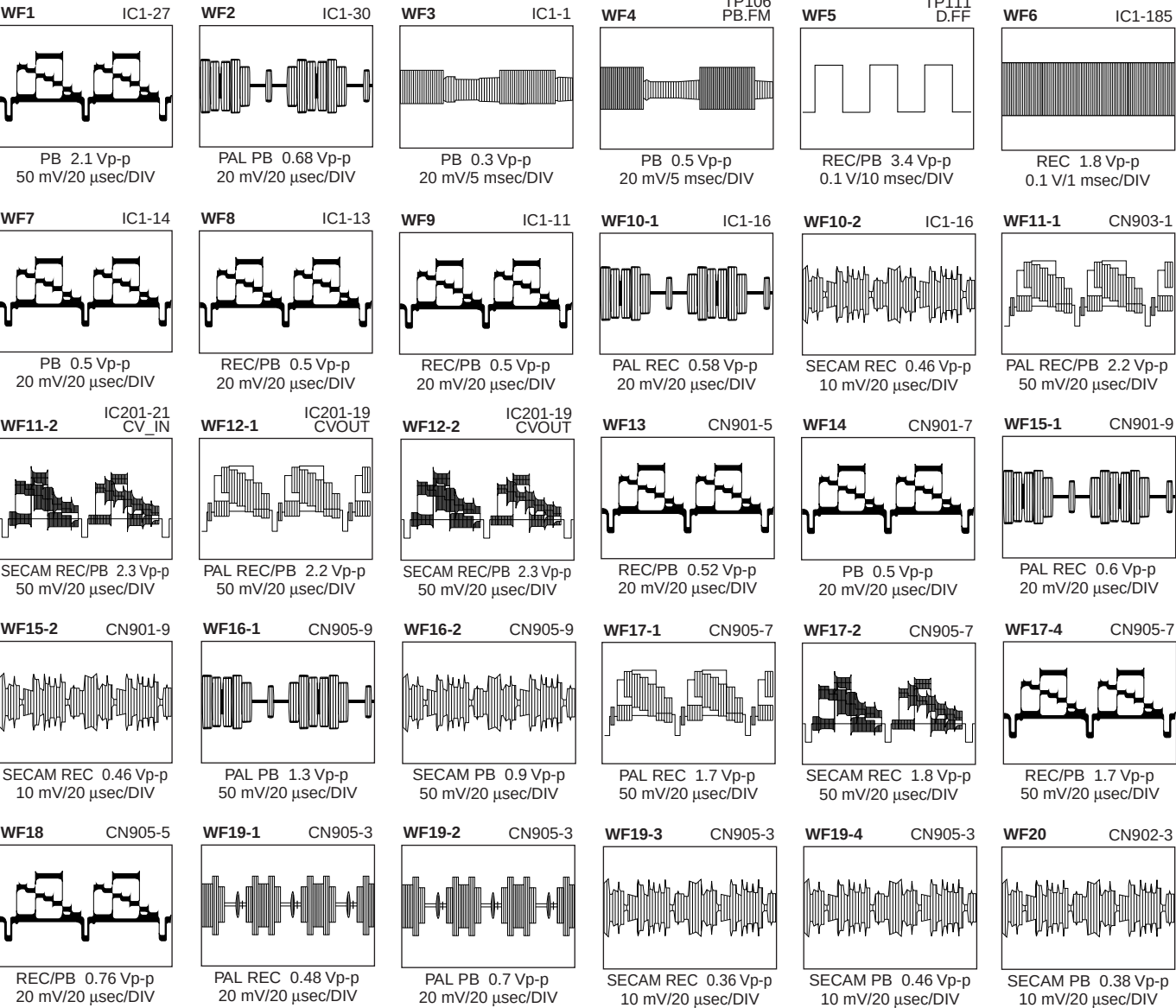
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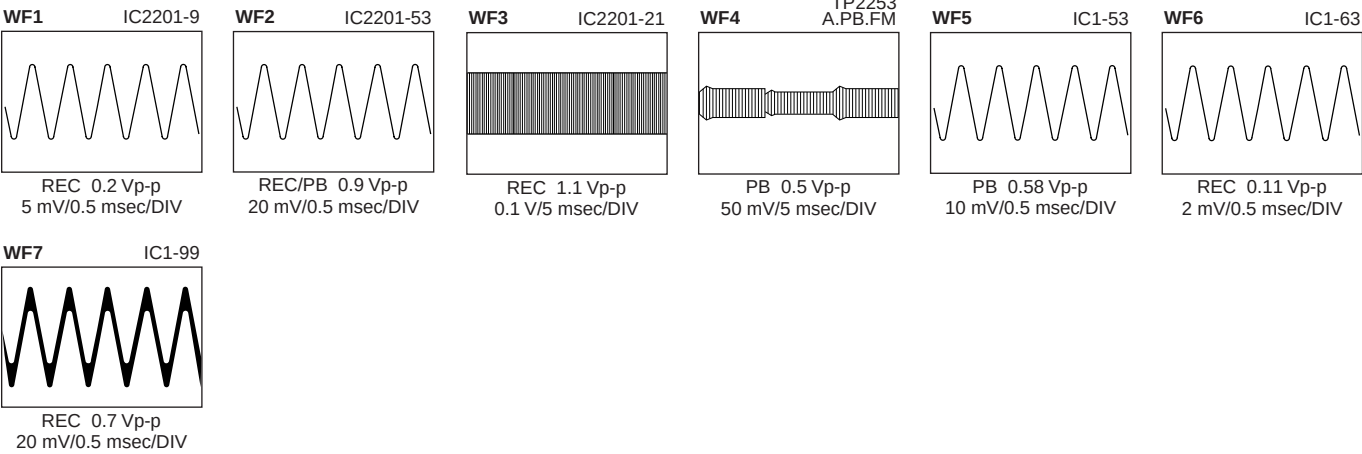
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4.23 VOLTAGE CHARTS

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3	2.6	2.6
4	1.9	1.5
5	1.9	1.5
6	2.4	2.1
7	1.4	0.8
8	0	0
9	2.6	3.1
10	2.3	2.3
11	3.1	3.1
12	2.8	2.8
13	3.1	3.1
14	2.3	2.3
15	0	0
16	2.8	2.8
17	1.4	1.4
18	2.8	2.8
19	2.8	2.8
20	2.8	2.8
21	2.0	2.0
22	2.8	2.8
23	2.8	2.8
24	5.0	5.0
25	0.4	0.4
26	0	0
27	2.3	2.3
28	2.3	2.3
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.5	2.5
33	5.0	5.0
34	2.7	2.3
35	5.0	5.0
36	2.5	0
37	2.3	2.3
38	-	-
39	1.2	1.2
40	-	-
41	2.5	2.5
42	-	-
43	0	0
44	2.2	2.2
45	4.6	4.6
46	4.9	4.6
47	2.9	2.9
48	2.6	2.6
49	5.0	5.0
50	2.5	2.5
51	2.8	2.8
52	0	0
53	2.6	2.6
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74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	5.0	5.0
80	5.0	5.0
81	0	0
82	0	0
83	0	0
84	2.2	2.2
85	2.4	2.4
86	2.2	2.2
87	5.0	5.0
88	0	0
89	0	0

MODE PIN NO.	REC	PLAY
90	0	0
91	0	4.0
92	2.6	2.6
93	0.8	0.5
94	0	0
95	2.5	2.5
96	2.5	2.5
97	2.5	2.5
98	0	0
99	2.5	2.5
100	0	0
IC201		
1	0	0
2	2.5	2.5
3	4.9	4.9
4	0	0
5	4.4	4.4
6	2.4	2.4
7	2.4	2.4
8	4.9	4.9
9	3.3	3.3
10	4.2	4.2
11	1.6	1.6
12	4.9	4.9
13	2.7	2.7
14	2.7	2.7
15	0	0
16	1.2	1.2
17	0	0
18	4.9	4.9
19	2.3	2.3
20	0	0
21	2.3	2.3
22	0.5	0.5
23	4.9	4.9
24	2.9	2.9
25	2.5	2.5
26	4.9	4.9
27	4.6	4.6
28	3.5	3.5
29	4.9	4.9
30	4.9	4.9
IC301[HR-S6955MS/S7955MS]		
1	0.2	0.2
2	1.9	1.9
3	3.8	3.8
4	0.4	0.4
5	0	0
6	3.1	3.1
7	0	0
8	2.4	2.4
9	2.4	2.4
10	2.2	2.2
11	2.4	0
12	4.4	4.4
13	2.4	2.4
14	3	1.9
15	2.7	2.7
16	0.3	4.9
17	0.2	2.5
18	2.2	2.2
19	2.3	2.3
20	2.4	2.4
21	2.4	2.4
22	4.8	4.8
23	3.1	3.1
24	3.1	3.1
25	2.7	2.7
26	0	0
27	0.4	0.4
28	0.3	0.3
IC2201		
1	2.3	2.3
2	0	0
3	2.3	2.3
4	0	0
5	0	0
6	2.4	2.4
7	2.0	2.0
8	0	0
9	0	0
10	0	0
11	0	0
12	2.0	2.0
13	0	0
14	0	0
15	0	0
16	2.4	2.4
17	0.5	0.5
18	2.4	2.4

MODE PIN NO.	REC	PLAY
19	2.4	2.4
20	2.4	2.4
21	2.4	0
22	2.5	0.7
23	0	0
24	2.5	0.7
25	4.8	4.8
26	2.5	0
27	0	-
28	4.1	2.8
29	4.3	1.7
30	4.4	1.6
31	1.1	1.8
32	2.4	2.4
33	2.4	2.4
34	0.8	0.8
35	2.4	2.4
36	0	0.2
37	1.6	1.6
38	0	0
39	0	0
40	4.8	4.8
41	0	0
42	4.8	0
43	4.7	4.7
44	3.3	3.3
45	0	0
46	4.7	4.7
47	2.4	2.4
48	2.4	2.4
49	0.4	0.4
50	0.2	0.2
51	0	0
52	0	0
53	4.3	4.3
54	0	0
55	0	0
56	0	0
57	4.4	4.4
58	9.6	9.6
59	4.4	0
60	0.8	0.8
61	2.4	2.4
62	2.4	2.4
63	4.2	4.2
64	4.3	4.3
IC3001		
1	2.5	2.5
2	0	0
3	2.5	2.5
4	2.4	2.4
5	0	1.5
6	2.4	2.6
7	2.4	2.4
8	2.4	2.4
9	4.8	4.8
10	4.8	4.8
11	0	0
12	0	0.2
13	0	2.0
14	4.4	4.6
15	4.9	4.6
16	0.6	0.6
17	4.0	4.0
18	0	0
19	3.1	3.1
20	4.5	4.5
21	3.8	3.8
22	0.2	1.9
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	0	0
31	4.9	4.9
32	4.9	4.9
33	0	0
34	4.9	4.9
35	0	0
36	0	0
37	0	0
38	0	4.9
39	4.0	4.0
40	0	0
41	4.8	4.8
42	4.8	4.8
43	0	0

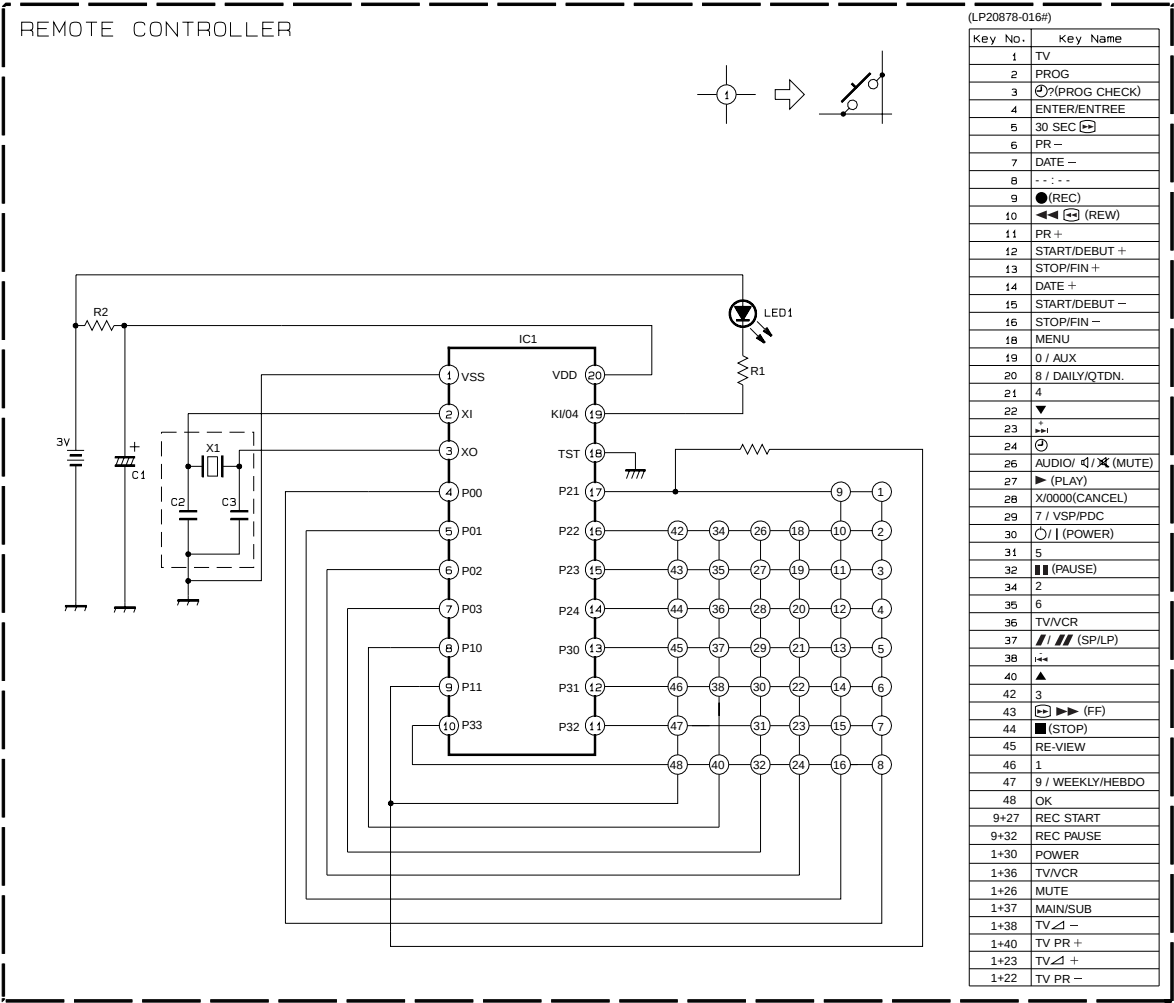
MODE PIN NO.	REC	PLAY
44	0	0
45	4.9	4.9
46	0	0
47	2.8	2.8
48	0	0
49	4.1	4.1
50	4.6	4.6
51	1.3	1.3
52	1.3	1.3
53	4.2	4.2
54	5.0	5.0
55	5.0	5.0
56	4.9	4.9
57	0	0
58	4.9	4.9
59	0	0
60	4.9	4.9
61	4.9	4.9
62	0	0
63	0	0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-
70	3.3	3.3
71	4.9	4.9
72	4.9	4.9
73	4.9	4.9
74	0	0
75	4.4	4.4
76	4.4	4.4
77	4.9	0
78	0	0
79	0	0
80	0	0
81	4.9	4.9
82	4.9	4.9
83	2.4	2.4
84	0	0
85	0	0
86	4.9	4.9
87	4.9	0
88	4.9	4.9
89	0	0
90	0	0
91	0	0
92	4.9	4.9
93	0	0
94	0	0
95	4.9	4.9
96	0	0
97	4.9	0
98	0.8	0.8
99	0	2.2
100	2.4	2.4
101	2.4	2.4
102	1.4	1.4
103	4.9	4.9
104	4.9	0
105	4.9	0
106	0	0
107	0	0
108	1.2	1.2
109	4.9	4.9
110	0	0
111	0	0
112	2.4	2.4
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
IC3003		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.9	4.9
IC7002		
1	4.9	4.9
2	4.9	4.9
3	0	0

MODE PIN NO.	REC	PLAY
CN1 [Except HR-S7955MS]		
1	0	0
2	0	0
3	0	0
4	2.3	2.3
5	2.3	2.3
6	2.3	2.3
7	2.6	2.3
8	2.6	2.3
9	2.6	2.3
CN1 [HR-S7955MS]		
1	0	0
2	0	0
3	0	0
4	2.3	2.3
5	2.3	2.3
6	2.3	2.3
7	2.6	2.3
8	2.6	2.3
9	2.6	2.3
10	0	0
11	0	0
CN501		
1	2.4	2.4
2	0	0
3	2.3	2.3
4	4.9	4.9
5	2.1	2.1
6	0.3	4.5
7	3.3	3.3
8	0	0
9	2.8	2.8
10	0	0
11	4.6	4.6
12	4.1	4.1
3	2.3	0.3
4	0	0
5	2.5	2.3
6	0	0
7	3.5	2.4
8	0	0
9	2.8	2.8
10	4.9	4.9
CN902		
1	2.8	2.8
2	0	0
3	0	0
4	2.4	2.1
5	1.3	2.3
6	4.9	4.9
7	0	0
8	0	0
9	2.3	2.3
10	0	0
11	0	0
12	2.4	2.1
CN903		
1	4.7	4.7
2	0	0
3	0	0
4	0	0
5	0.8	0.8
6	10.1	10.1
7	10.1	10.1
8	4.5	4.5
9	4.5	4.5
10	0	0
CN904		
1	0	0
2	4.9	4.9
3	0	0
4	0	0
5	0.2	0.2
6	0	0.2
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
CN905		
1	2.4	2.4
2	0	0

MODE PIN NO.	REC	PLAY
3	2.8	2.8
4	0	0
5	3.3	3.3
6	0	0
7	2.1	2.1
8	0	0
9	2.3	2.3
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.3	2.3
6	2.2	2.2
CN2002		
1	0	0
2	0	0
CN3001		
1	2.6	2.7
2	13.5	13.5
3	6.0	6.0
4	0	0
5	0	8.0
6	0	0
7	0	0
8	13.3	13.3
9	3.0	3.1
10	3.0	3.0
11	1.5	1.5
12	3.0	3.1
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	5.0	5.0
8	0	0
9	0	0
10	0.1	0
CN7001		
1	-	-
2	-	-
3	5.6	5.6
4	0	0
5	5.8	0
6	5.8	5.8

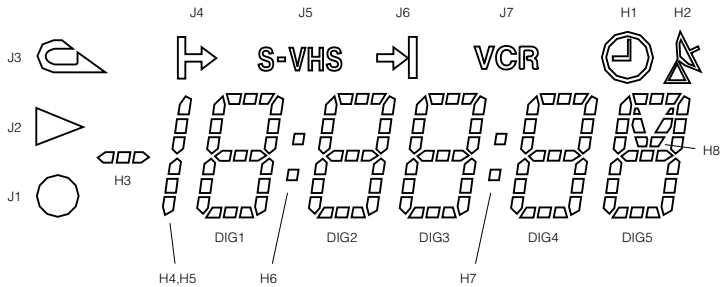
4.24 REMOTE CONTROLLER SCHEMATIC DIAGRAM

- NOTES:
- 1.All parts shown in this schematic are critical for safety.
 - 2.This schematic is only for reference.
 - Avoid replacing individual parts.
 - Replace the entire unit only.



4.25 FDP GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

No.	CONNECTION
1	CATHODE G, J7, H8
2	CATHODE F, J6, H7
3	CATHODE E, J5, H6
4	CATHODE D, J4, H4, H5
5	CATHODE C, J3, H3
6	CATHODE B, J2, H2
7	CATHODE A, J1, H1
8	COMMON ANODE H1-H8
9	COMMON ANODE J1-J7
10	COMMON ANODE (DIGIT 5)
11	COMMON ANODE (DIGIT 4)
12	COMMON ANODE (DIGIT 3)
13	COMMON ANODE (DIGIT 2)
14	COMMON ANODE (DIGIT 1)

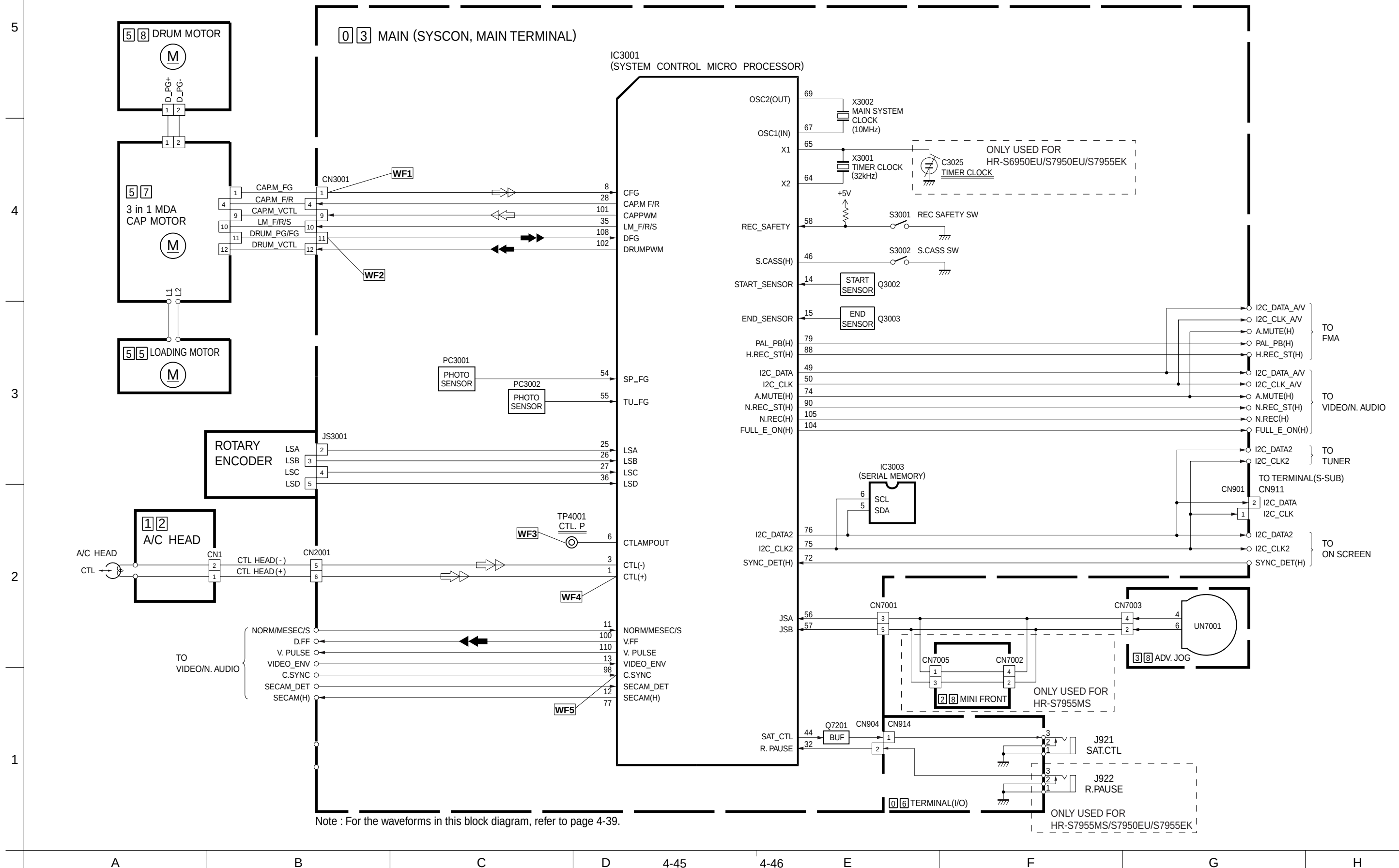
4.26 CPU PIN FUNCTION

<SYSCON IC3001>

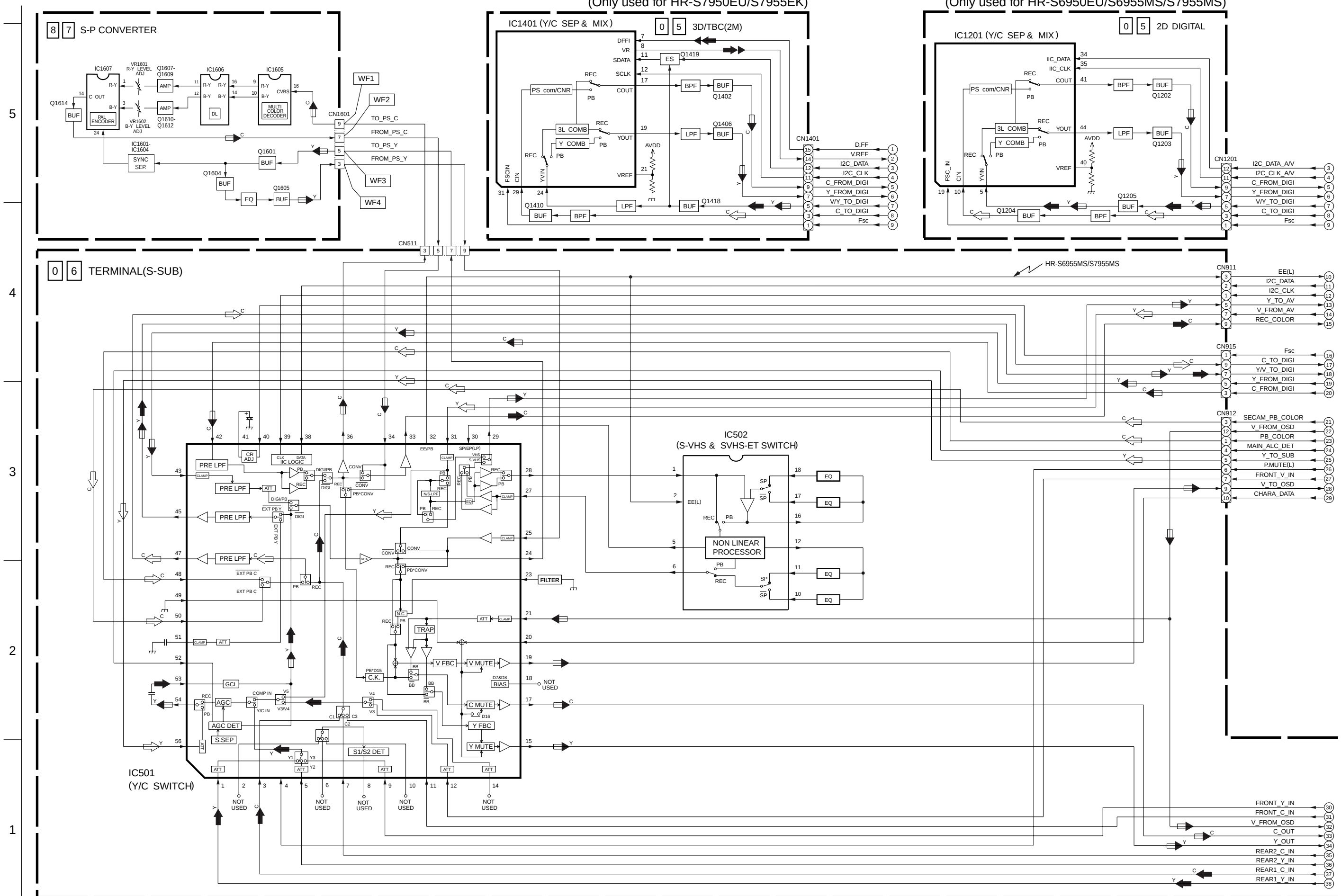
PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBias	-	CTL BIAS VOLTAGE
5	CTLFb	IN	CTL PULSE FEEDBACK
6	CTLAMPout	OUT	CTL PULSE OUTPUT
7	CTLSMTin	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	(NORM MODE: L/MESECAM MODE: M/SVHS MODE:H)
12	SECAM_DET	IN	SECAM COLOR DETECT (SECAM:H)
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	START SENSOR
15	END_SENSOR	IN	END SENSOR
16	KEY1	IN	OPERATION CONTROL SIGNAL
17	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
18	SCR_ID/	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)
19	KEY2	IN	OPERATION CONTROL SIGNAL
20	AFC	IN	TUNING CHECK
21	RF AGC	IN	CHANGES IN ATSC-HC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
22	A.ENV/ND(L)	IN	AUDIO PB FM ENV/INPUT/NON HIFI MODE:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP.M F/R	OUT	CAPSTAN MOTOR FORWARD/REVERSE CONTROL
29	RC	IN	REMOTE CONTROL DATA INPUT
30	DIG1	OUT	LED DRIVE
31	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
32	R.PAUSE	IN	REMOTE PAUSE CONTROL
33	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
34	DIG2	OUT	LED DRIVE
35	LM_F/R/S	OUT	LOADING MOTOR DRIVE
36	LSD	OUT	MECHANISM MODE DETECT (D)
37	DIG3	OUT	LED DRIVE
38	SB_GAIN(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	DIG4	OUT	LED DRIVE
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	P.CTL(H)	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
42	DIG5	OUT	LED DRIVE
43	VSS	-	GND
44	SAT_CTL	OUT	CONTROL SIGNAL FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	S.CASS(H)	IN	DETECTION SIGNAL FOR SVHS CASSETTE (SVHS:H)
47	OSD_CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
48	MESECAM(H)/AGC_CTL	OUT	MESECAM: H/AGC CONTROL INPUT
49	I2C_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
50	I2C_CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
51	DIG6	OUT	LED DRIVE
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	JSA	IN	INPUT FOR THE JOG SHUTTLE

PIN NO.	LABEL	IN/OUT	FUNCTION
57	JSB	IN	INPUT FOR THE JOG SHUTTLE
58	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
59	SW1	OUT	TUNER SYSTEM MODE:H
60	SW2	OUT	TUNER SYSTEM MODE:L
61	DIG7	OUT	LED DRIVE
62	FWE	OUT	FLASH WRITE ENABLE
63	NMI(L)	-	CONNECT TO GND
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK(10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK(10MHz)
70	VCC/VCL	-	SYSTEM POWER
71	MODE	IN	FWE MODE
72	SYNC_DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL(DETECTED:H)
73	TU_V_MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C_CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C_DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	SECAM(H)	OUT	SECAM MODE:H
78	P.ON_PULSE	OUT	P.ON_PULSE(H)
79	PAL_PB(H)	OUT	PAL FM(PB ON:H)
80	V.P.CTL	OUT	V.PULSE CONTROL, V COMPENSATION DURING SPECIAL PLAYBACK
81	VHS(H)	OUT	VHS MODE(H)
82	VCC	-	SYSTEM POWER
83	SLOW_P	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE
84	VSS	-	GND
85	SP_SHORT(H)/FLY.ON(H)	OUT	MODE SELECT/FLYING ERASE ON:H
86	LP_SHORT(H)/FLY.REC(H)	OUT	MODE SELECT/FLY REC START:H
87	SEP(H)	OUT	SEP PB:H
88	H.REC_ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)	OUT	SPECIAL PLAYBACK:H
90	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
91	Da	OUT	LED DRIVE
92	Db	OUT	LED DRIVE
93	Dc	OUT	LED DRIVE
94	Dd	OUT	LED DRIVE
95	De	OUT	LED DRIVE
96	Df	OUT	LED DRIVE
97	Dg	OUT	LED DRIVE
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	P.MUTE(L)	OUT	PICTURE MUTE CONTROL(MUTE:L)
104	FULL_E_ON(H)	OUT	FULL ERASE ON:H
105	N.REC(H)	OUT	NORMAL AUDIO REC MODE CONTROL SIGNAL (REC:H)
106	ET_REC(H)	OUT	ET REC MODE:H
107	HI_S_FF_REW	OUT	HIGH SPEED FF/REW CONTROL
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFERENCE VOLTAGE

4.27 SYSTEM CONTROL BLOCK DIAGRAM



4.28 VIDEO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-39.

A

B

C

D 4-47

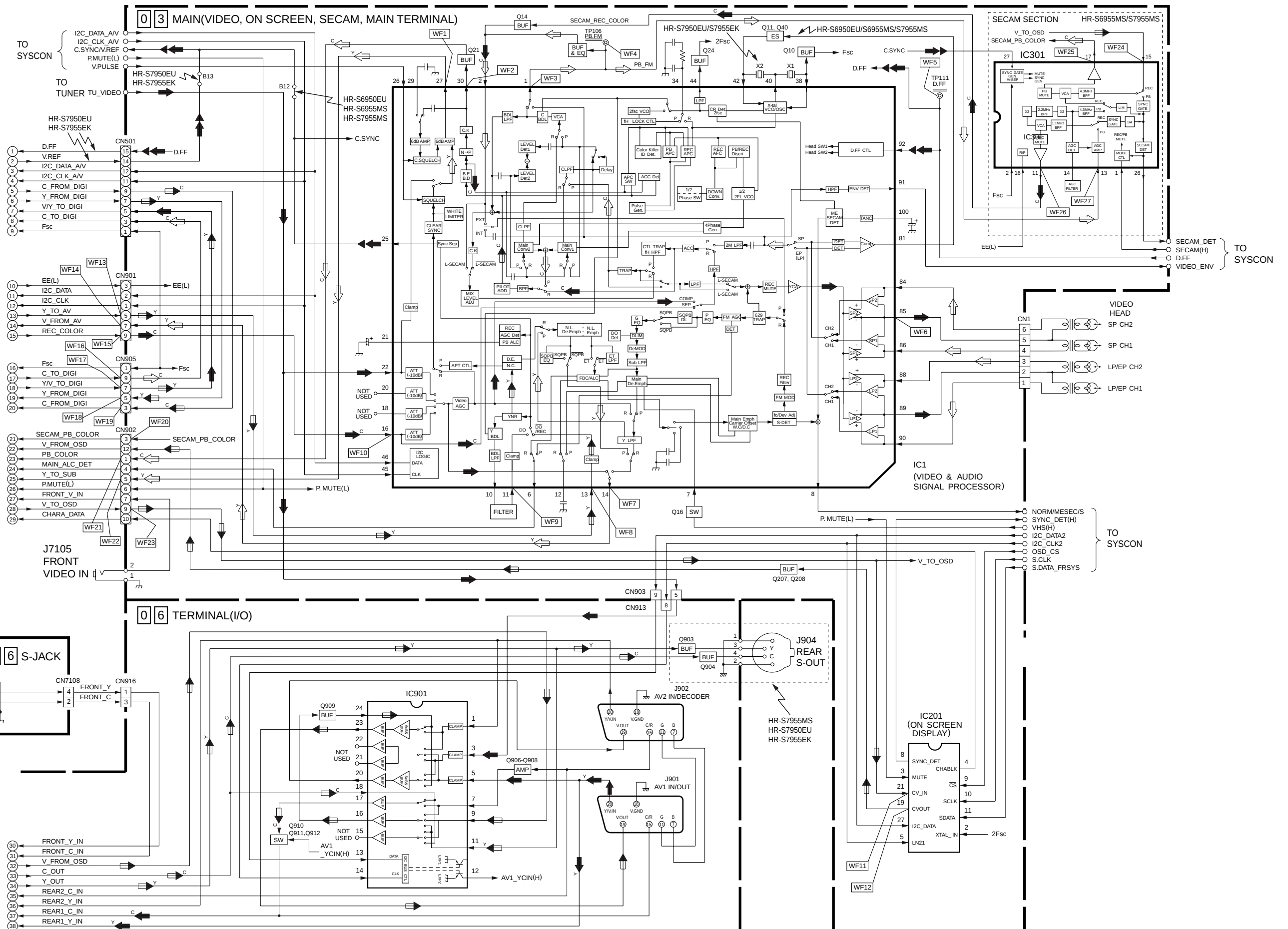
4-48

E

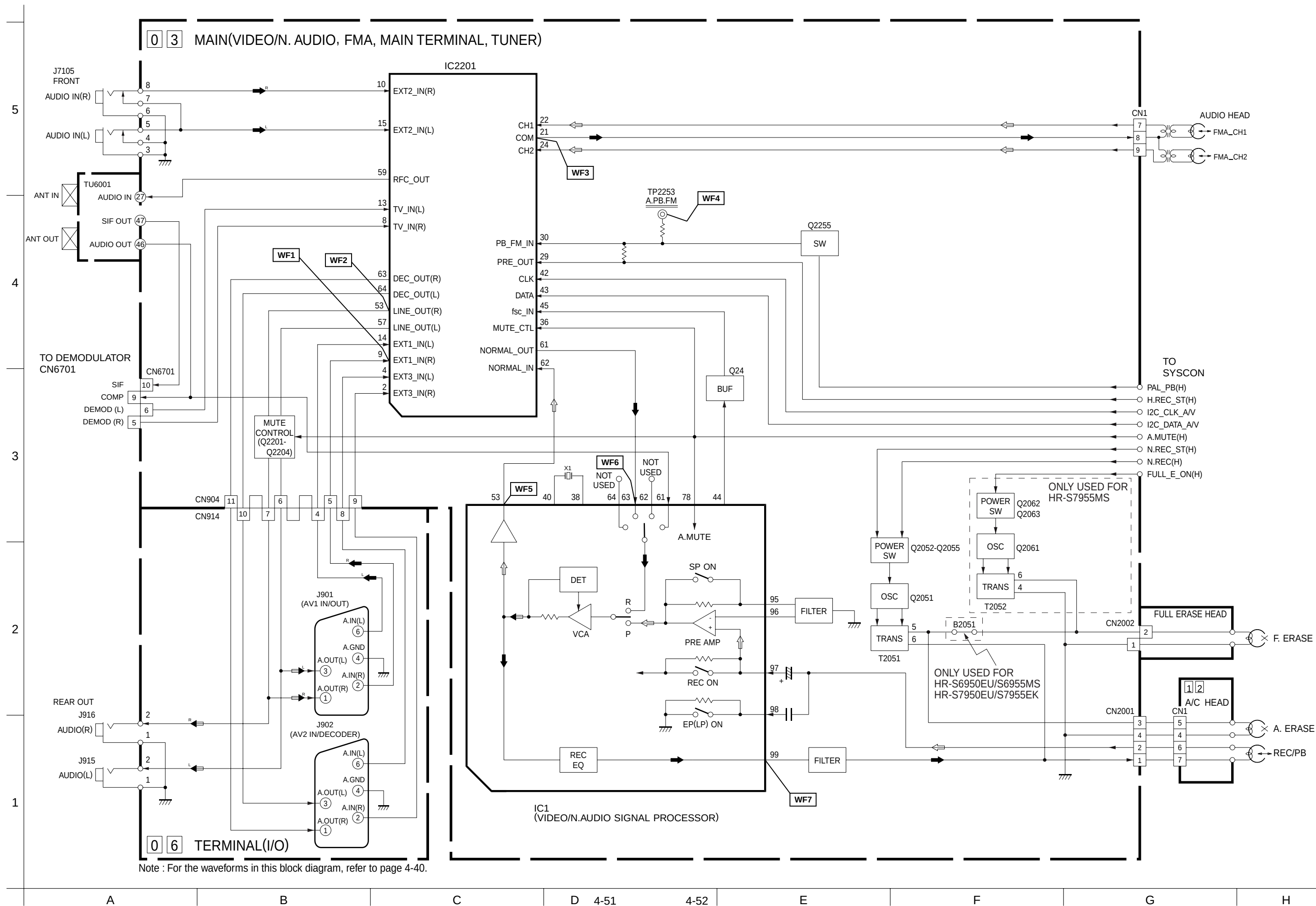
F

G

H



4.29 AUDIO BLOCK DIAGRAM





VICTOR COMPANY OF JAPAN, LIMITED
VIDEO DIVISION

S40894



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